Can Green Bonds Flourish in a Complex-Finance Brownfield?

A Croatan Institute Working Paper

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About the Author

Bill Harrington is a senior fellow at Croatan Institute. His work centers on boosting the sustainability of the world financial system with the dual aims of rationalizing economic decision-making and avoiding bailouts. He focuses on the capitalization and regulation of derivative contracts and structured finance.

Bill has evaluated products in the international financial markets since 1987, most recently as a research journalist at Debtwire ABS and before that as a senior vice president and derivatives analyst at Moody's Investors Service (Moody's). He also structured derivative contracts that referenced currencies and global interest rates at Merrill Lynch and analyzed the trading patterns of these indices as an economist at The WEFA Group.

Since 2011, Bill has worked to rectify the under-capitalization of the types of complex finance that started and fueled the financial crisis. He has submitted technical comments to US and European regulators, to US and UK legislative committees, and to rating agencies such as Fitch Ratings, Moody's, and S&P Global. Bill also provided insights regarding rating practices at Moody's to the US state attorneys general who settled with the company in early 2017.

Bill has self-financed this advocacy and conducts it entirely in the public domain. He regularly speaks to the press, and his work has been profiled in the *New York Times*, the *Financial Times*, the *Guardian*, *Bloomberg*, *Business Insider*, *ProPublica*, the *Wall Street Journal*, the *Washington Post*, and on the BBC and American Public Media's Marketplace. He places all work on government and other websites and actively engages regulators, market practitioners, journalists, and other parties in on-the-record dialog.

Additionally, Bill serves on the Experts Board of Wikirating.org.

Bill has two degrees from the University of Pennsylvania: an M.B.A. with a concentration in finance from the Wharton School; and a B.A. in Economics from the College of Arts and Sciences.

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About Croatan Institute

Croatan Institute is an independent, nonprofit research institute whose mission is to harness the power of investment for social good and ecological resilience by working at the critical nexus where sustainability, finance, and economic development intersect. For more information about the Institute's people, programs, and publications, please visit www.croataninstitute.org.

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OVERVIEW: Grading finance on its contribution to financial sustainability

This working paper proposes a simple numeric scale that indicates the impact that a financial product or contract has on the sustainability of a financial system. Scoring a product on contribution to financial sustainability is both long overdue and very timely. Long overdue because the 10th anniversary of the Lehman bankruptcy looms in October 2018. Very timely because the US Administration is acting to resuscitate crisis-causing sectors such as residential-mortgage-backed securities, crisis-causing contracts such as non-margined swap contracts, and an exceptionally harmful type of the swap contract (a flip clause swap).

The proposed scale assigns score values in the range from -10 to +10, with the negative endpoint indicating an entirely destructive impact on a financial system and the positive endpoint indicating an entirely sustainable impact. A big-picture utility of a financial sustainability scale is to identify and limit the use of financial products that unequivocally harm financial sustainability. Prominent in the negatively-scored harmful category are products that have either prompted taxpayer bailouts or required them.

In practical terms, practitioners in the green bond sector can use the scores to assess the robustness of financial instruments such as residential mortgage-backed securities backed by flip clause swaps and other types of bonds that self-identify as "green."

This working paper has eleven sections, three appendices, and a bibliography.

Sections 1-3 describe the financial sustainability score, identify the key application of quantifying the systemic harm caused by complex finance such as securitization deals with flip clause swaps, and call out the "green" sector for having embraced the deals. Sections 4-5 identify the financial regulators and the credit rating, investment, and legal firms that have first-hand experience with harmful finance but still promote it. Section 6-8 grade securitization deals and the respective derivative counterparties by pinpointing, deciphering, and evaluating information in a range of publicly available documents. Sections 9-11 use financial sustainability scores to assess current and proposed US financial regulation.

Appendix 1 specifies the attributes of financial products that boost or undercut the sustainability of a financial system. It also presents deals that this working paper describes in rank order of the respective scores from (-10) to (+10). The table also details the respective attributes that produce each score.

Appendix 2 poses questions on how to expand and refine financial sustainability scores.

Appendix 3 is a glossary that defines terms, acronyms, and idiomatic expressions that this working paper uses. The intent is to encourage a wide range of readers, from specialists in complex finance to interested bystanders, to assess financial sustainability themselves using this working paper as a tool. Many entries are of financial instruments that remain poorly understood despite having been deeply implicated in the financial crisis. The instruments are so dauntingly complex that specialists gloss over the mechanics rather than scrutinize them so that others can make informed judgements on products usefulness. The remaining entries are of financial companies, "green" analysis, journalistic methods, and pictorial descriptions of nonsensical systems.

INTRODUCTION

1. Crisis-causing complexity still undermines the global financial system

Strip the whitewash off designed-to-fail finance

Credit rating agencies subvert the financial system to a greater degree than before the financial crisis. The companies have many incentives to assign ratings that are unrealistically strong (rating inflation) and to "publish" and market crisis-era blueprints for deal assembly. Facing no accountability, rating agencies inflate the ratings for many entities, especially ones that operate in the financial sector, or backstop financial entities, or use complex financial tools such as derivative contracts and securitizations.

The financial entities with inflated ratings are the same types, and in many cases the same ones, that incubated the financial crisis, exacerbated it, and lobbied hard to play the game again. As a result, the ratings in major consumer and commercial sectors — autos, below-investment grade companies, commercial real estate, equipment, finance, higher education, infrastructure, and residential mortgages — are too high and the possibility of investor losses too well hidden.

In short, financial practitioners who integrate environmental, social, and governance (ESG) factors into investment decisions encounter rating inflation everywhere. Most directly, supposedly "innovative" bonds with ESG features, such as "green" asset-backed securities (ABS), incorporate many of the same discredited components that made the 2008 crisis inevitable.

Crises aside, rating inflation harms financial sustainability by distorting price signals, directing investment to suboptimal uses, and rewarding companies for operating on a shoestring. As an analogy, rating inflation harms the health of the financial system in the same ways that cigarette smoking harms public health. Both activities calm users for a short period while inducing chronic damage, draining public resources, and increasing the odds of catastrophic individual and collective outcomes.[1]

Rather than press credit rating agencies to assign accurate ratings, the academic, financial, private, public, and research sectors egg on credit rating agencies to assign inflated ratings. In the green bond sector,[2] analytics firms such as the Climate Bonds Initiative (CBI) and Sustainalytics "green stamp" even the worst of crisis-causing finance such as residential mortgage-backed securities (RMBS) that are backed by unnecessarily complex derivative contracts. Green analytics firms also partner with credit rating agencies to operate "green tracking" tools such as the S&P Green Bond Index. Returning the favor, credit rating agencies inject rating inflation directly to the green analytics sector by assigning highly-favorable "green bond assessments" along with unrealistically high credit ratings.

Green stamping of products with inflated credit ratings may occur in part because no countervailing system evaluates the impact that a financial product has on the sustainability of a financial system. No scale that this author has found measures the impact of a financial product on: improving or distorting price signals;

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[1] Similar to current promotion by the complex finance industry of its product being economically beneficial, the US cigarette industry advertised smoking as a beneficial practice and implied endorsement by medical practitioners for several decades in the mid-20th century. Leah Lawrence, "Cigarettes were once 'physician' tested, approved," *Healio, HemOnc today*, March 10, 2009.

[2] Torsten Ehlers and Frank Packer, "Green bond finance and certification," *BIS Quarterly Review* (September 2017): 89. "Green bonds are fixed-income securities which finance investments with environmental or climate-related benefits."

inducing or reducing chronic damage; draining or building public resources; or increasing or trimming the odds of self-induced catastrophe. Clearly, critical analysis is sorely needed.

This working paper aims to jumpstart the construction of just such a countervailing system by proposing a simple numeric scale that indicates the impact that any given financing instrument has on the sustainability of a financial system (a financial sustainability score). Values range from -10 to +10, with the negative endpoint (-10) indicating an entirely destructive impact on a financial system and the positive endpoint indicating (+10) an entirely sustainable impact.

The scale has a bias towards negative values and is grounded at (-2) rather than (0). The negative bias reflects both the recurring nature of financial crises and the high correlations between all types of financing instruments that result from too-big-to-fail regimes and the proliferation of derivative contracts. The negative bias also corrects the excessively positive bias that existing scales such as credit ratings, equity recommendations, and green bond assessments generally embed. Overall, the top-heavy nature of existing scales intensifies the destructive impact of the financial instruments being measured.[3]

The proposal is purposely simple to be intelligible to non-practitioners and to signal the need for a much broader research and advocacy program around financial sustainability. However, a ready-to-go utility of a financial sustainability scale is to identify and limit the use of financial products that unequivocally harm financial sustainability.

For instance, practitioners in the green bond sector can use the scale to assess the robustness of a financial product such as an ABS deal that self-identifies as "green." In three noteworthy examples, the green RMBS deals from the Dutch mortgage company Obvion NV — Green STORM 2016 BV, Green STORM 2017 BV, and Green STORM 2018 BV — are each assigned a poor score (-7). Rabobank, which wholly owns Obvion and backstops its obligations to the three deals, is assigned the worst possible score (-10) for the respective derivative exposures.[4]

Financial sustainability scores will also support a converse and equally important utility — identifying and promoting the use of financial products that sustain the financial system. Promoting the stability of a given financial system is both an important end goal and a way to sustain the underlying societal compact and physical environment. A strong case can be made that the financial crisis both weakened the US social compact and help convince large segments of US society to support a roll-back of many sustainability practices, including environmental ones.

Refining the financial sustainability scale and advocating for financial regulations and products that strengthen the financial system are necessarily intertwined and uphill battles. The finance sector — academics, accountants, auditors, bankers, counsel, elected officials, institutional investors, issuers, journalists, policy makers, pricing evaluators, rating agencies, regulators, researchers, taxpayers, think tankers, third-part experts, and underwriters — is too large. Too many of these people are invested in

[3] Bill Harrington, "Moody's bets Germany will support Deutsche Bank derivatives above all else," *Debtwire ABS*, October 12, 2016. Also, Norbert J. Gaillard and William J. Harrington, "Efficient, commonsense actions to foster accurate credit ratings," *Capital Markets Law Journal* 11, No.1 (2016): 58, https://doi: 10.1093/cmlj/kmv064. The Capital Markets Law Journal kindly allows the author to provide a free-access link to the article on his biography page on the Croatan Institute website.

[4] The table in Appendix 1 of this working paper presents the three Green STORM RMBS deals, the associated Rabobank exposures, and other products, in rank order of the respective scores from (-10) to (+10). The table also details the respective attributes that produce each score.

perpetuating the type of self-cannibalizing finance that would have consumed itself and the global economy in 2008 but for massive bailouts and other forms of taxpayer support.

The author welcomes all feedback and will incorporate it in updated versions of the working paper.[5]

2. New scoring system exposes 20-year deformities in the complex-finance complex

Deploying shoe leather journalism, advocacy, and research to assess financial sustainability

One financial instrument with a proven ability to undermine the global financial system is an ABS deal that embeds a highly-specific derivative contract — "an uncleared and non-margined swap contract with replacement provisions, rating agency conditions and a flip clause" (flip clause swap). The swap, which remains the go-to hedging instrument of ABS dealmakers globally because it enables them to undercapitalize deals, was integral to the ABS deals that ignited and fueled the financial crisis.[6]

ABS deals with a flip clause swap anchor the negative zone of the financial sustainability scale with scores that range from (-10) to (-3). For instance, the three Green STORM RMBS deals each have a poor score (-7), because each embeds a *large* flip clause swap with two particularly destructive components — each swap is both *long-dated and balance-guaranteed.* Flip clause swaps that are large, long-dated, and balance-guaranteed have been common in EU RMBS deals since before the crisis. A particularly destructive variant of the same type of flip clause swap was ubiquitous in pre-crisis US RMBS deals and contributed both to the deals' failures and extremely poor scores (-9).[7]

Nine student loan ABS (SLABS) deals that the large US student loan company Navient operates each have the worst possible financial sustainability score (-10).[8] Each deal embeds one of the most destructive types of flip clause swap — a *cross-currency*, long-dated, balance-guaranteed flip clause swap. Compared to a single-currency swap, the cross-currency component of each swap increases the risks posed to the respective investors, swap provider, and financial system by several quantums.

Apart from ABS dealmakers, counterparts in the corporate and government sectors can jeopardize financial sustainability by embedding a flip clause swap in instruments that finance the building and protection of a wide range of infrastructure. The financing instruments include "project finance transactions, catastrophe bonds, gas pre-pay financings, stand-alone tax-exempt single- and multifamily housing bonds, equipment trust certificates, municipal pools, and industrial development bonds."[9]

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[5] Please send comments to the author's Croatan Institute email address, bill@croataninstitute.org.

[6] William J. Harrington, Submission to the US Commodity Futures Trading Commission "Re: RIN 3038-AD54 'Capital Requirements for Swap Dealers and Major Swap Participants'" (May 4, 2017), 13.

[7] Ibid., 100-101.

[8] The table in Appendix 1 of this working paper presents the nine Navient deals, 29 other Navient deals, the associated counterparty exposures, and other products in rank order of the respective scores from (-10) to (+10). The table also details the respective attributes that produce each score.

[9] Christina Polizu, Andrew O'Neill, Belinda Ghetti, and Felix E. Herrera, *Criteria/Structured Finance/General: Special-Purpose Vehicle Margin Requirements for Swaps—Methodology and Assumptions* (New York: S&P Global Ratings, October 10, 2017), 2.

The author of this working paper is one of the few researchers worldwide to have published pre-crisis analyses and follow-up post-mortems of flip clause swaps.[10] Academic and other research on the origins of the financial crisis have largely ignored the presence of flip clause swaps in pre-crisis ABS.[11]

The research gap is a harmful and embarrassing omission, particularly since ABS bankers, counsel, dealmakers, investors, credit rating agencies (rating agencies), and regulators have long known just how destructive a flip clause swap can be. In a major example, a US flip clause case that the Lehman estate initially filed in 2010 has pitted it against 200-plus investors, 12 too-big-to-fail global entities, and counsel at 22 law firms.[12] The case facts — the Lehman estate lost 100% of swap assets equal to USD 1 Billion — plainly demonstrate the zero-sum nature of a flip clause.[13] The potential for 100% loss of a swap asset drives the worst possible score (-10) for the provider exposure to a flip clause swap (i.e., the converse of the deal exposure to the swap).[14]

The industry silence on the zero-sum nature of flip clause swaps, like the top-heavy evaluation scales, increases the swaps' destructive impact. Had a counterweight such as a financial sustainability scale been in place by 2003, Lehman might not have bankrupted itself nor, in concert with other ABS dealmakers, almost destroyed the global financial system. Fewer ABS deals might have been issued, pre-crisis growth might have been slower, and the today's world might be in much better shape.

The working paper aims to undo the industry omerta on flip clause swaps in several ways. For a start, the author used the journalistic method to pose questions regarding flip clause swaps to five entities: a Dutch company that uses the swaps heavily in RMBS deals, including green RMBS deals; two rating agencies that assign ratings to most of the Dutch company's RMBS; and two evaluators of green bonds, including the Dutch company's green RMBS deals.[15]

Obvion is the Dutch company that embeds RMBS deals with flip clause swaps. Moody's Investors Service (Moody's) and S&P Global Ratings (S&P) assign *inflated* credit ratings and assessments to: the Obvion RMBS; other ABS globally; flip clause swaps; providers of flip clause swaps; and the respective sovereigns

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[10] For a comprehensive compilation of the author's work in assessing the associated credit rating methodologies from 1999-2013, see William J. Harrington, Electronic Letter to the US Securities and Exchange Commission "Re: Rule Comment No. 4-661" (June 3, 2013), 1-152. For a recent critique of US regulation of flip clause swaps, see William J. Harrington, "US Financial Regulators Balk at Examining Complex Finance," *Croatan Institute Views*, February 8, 2018.

[11] Juan Ospina and Harald Uhlig, "Mortgage-Backed Securities and the Financial Crisis of 2008: a Post Mortem," *NBER Working Paper No. 24509* (April 2018) is a recent example. The paper, which demonstrates that the initial AAA ratings of pre-crisis US RMBS should have been BB or lower, does not discuss flip clause swaps, bailouts, or other government support for the providers of flip clause swaps.

[12] Dave Simpson, "Bankruptcy Court's Block Of $1B Lehman Clawback Upheld,' *Law360*, March 14, 2018. Also, Dave Simpson, "Citibank Reaches Deal To Exit Lehman's $1B Clawback Fight," *Law360*, December 1, 2017.

[13] Lehman Brothers Special Financing Inc. v. Bank of America NA (In re Lehman Brothers Holdings Inc.), 2016,, 11. "The amount of the proceeds of the liquidation of the Collateral was insufficient to make any payment to LBSF under the Waterfall after proceeds were paid pursuant to Noteholder Priority."

[14] The provider exposure to a swap is generally the swap mark-to-market. See William J. Harrington, Submission to the US Commodity Futures Trading Commission "Re: RIN 3038-AD54 'Capital Requirements for Swap Dealers and Major Swap Participants'" (May 4, 2017), 43-45, 98-109 and 115-122.

[15] The emailed questions of December 4, 2017 are available on the author's LinkedIn profile. See William J. Harrington, *GREEN STORM RMBS and ABS Flip Clause Swaps* (February 28, 2018). The author also invited the five entities to comment on a late stage draft of this working paper in a group email of June 25, 2018.

that backstop the preceding financial products, contracts, and entities. CBI, Sustainalytics, and Moody's evaluate the greenness of green bonds, including Obvion green RMBS deals.[16] S&P also evaluates the greenness of green bonds. None of the five entities have plausible deniability regarding the destructive impact of ABS deals with flip clause swaps.

Publicizing the open secret of the securitization sector — that flip clause swaps damage investors, swap providers, and financial systems — serves several purposes beyond that of establishing a benchmark for financial practices that are entirely harmful. A large gap in the historic record of the financial crisis is narrowed. Dealmakers, evaluators, and rating analysts lose a fig leaf to defend the issuance of under-capitalized deals.[17] Policymakers may stop flip clause swaps as a means of generating economic growth.[18]

3. Greenwashing: Green endorsements of contaminated products penalize good ones

Financial sustainability? CBI and Sustainalytics punt to "usual credit rating" suspects

CBI, Moody's, Obvion, S&P, and Sustainalytics take no responsibility for the damage that flip clause swaps cause, judging by the respective responses and non-responses to the questions that the author of this white paper posed to the five entities on December 4, 2017.[19]

To paraphrase the questions posed to each organization: "Do complex ABS deals such as an RMBS deal with a flip clause swap harm the financial system? In turn, will a financial crisis precipitate societal responses that undermine the sustainability of both the financial and ecological systems?"

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[16] Torsten Ehlers and Frank Packer, "Green bond finance and certification," *BIS Quarterly Review* (September 2017): 91. "The CBI is an international non-profit organisation, funded by grants from non-profit and government sources as well as revenue from public sector contracts." Also, page 93. "Table 1, Characteristics of different green bond identification and certification schemes," which compares five attributes of green bond evaluators, including CBI, Moody's, and S&P. Also, page 95. "Table 2, Comparison of Green Bond Principles and rating agencies' green certifications," which details attributes of the respective Moody's and S&P green methodologies.

[17] Louise Story, Landon Thomas, Jr., and Nelson D. Schwartz, "Wall St. Helped to Mask Debt Fueling Europe's Crisis," *New York Times*, February 13, 2010. The article describes Titlos PLC, a notorious flip clause swap at the center of the Greek crisis. Edward Manchester — a Moody's senior vice president who, with the author of this working paper, co-authored the Moody's methodology for flip clause swaps in 2006 — offered a blunt assessment of the Titlos swap within a year of having overseen the initial rating. 'This swap is always going to be unprofitable for the Greek government." **N.B.** Edward Manchester remains Moody's principal analyst for flip clause swaps. He wrote the Moody's sector comment *"CFTC relief from margining from SPV Swaps is credit positive but narrow in scope,"* December 12, 2017.

[18] US Department of the Treasury, *A Financial System That Creates Economic Opportunities—Capital Markets, Report to President Donald J. Trump, Executive Order 13772 on Core Principles for Regulating the United States Financial System* (October 2017) 215, https://www.treasury.gov/press-center/press-releases/Documents/A-Financial-System-Capital-Markets-FINAL-FINAL.pdf. "Treasury would support a legislative amendment to CEA Section 2(h)(7) providing the CFTC with rulemaking authority to modify and clarify the scope of the financial entity definition… Any legislative amendment should provide the SEC analogous rulemaking authority under Exchange Act Section 3C(g) with respect to exceptions from the clearing requirement for security-based swaps." Also, J. Christopher Giancarlo and Bruce Tuckman, "Swaps Regulation Version 2.0," CFTC White Paper, 80. "[T]he Commission might provide relief to end users by reconsidering how it interprets the definition of a financial entity in the Commodity Exchange Act 2(h)(7)(C)(i). A narrower definition…could bring additional clarity and relief to a variety of end users, including…certain types of special purpose vehicles, and even some energy firms."

[19] See footnote 15 of this white paper.

Moody's and S&P did not respond at all.[20] Obvion evaded the questions in a series of emails that concluded by merely pointing to disclosures on flip clause swaps in the technical documents of the respective RMBS deals.[21]

CBI and Sustainalytics at least went on-the-record as being indifferent to the harmful impact that a financing instrument may have on the sustainability of a financial system. To paraphrase the respective CBI and Sustainalyics responses: *Financial sustainability is not our concern. We take the capitalization of the financial instruments as a given. Environmental degradation is permanent, whereas financial setbacks are short-term.* Following are excerpts from each entity's email response.

Climate Bonds Initiative responded by stating that they "explicitly do not review or comment on credit risk aspects of green bonds; that's addressed, for better or for worse, by the usual credit rating or credit assessment tools," according to CEO Sean Kidney. CBI also stated that it does not, "examine whether issuance practices may or may not contribute to relatively short term financial system risk; although we do of course explicitly endorse the view that *not* addressing climate change constitutes a vast forward risk to the financial system (let alone economic, social, special and eco systems)."

Sustainalytics responded by saying that the company's "scope of work relating to green bonds is to help issuers go to market with credible green, social and sustainability bonds by developing bond frameworks aligned to industry norms and market expectations." Sustainalytics also added that, "In terms of sustainability, we look at the environmental and social impact of a bond."

However, this reliance on "usual credit rating" tools and "industry norms" to sustain the financial system undermines both it and the physical environment in ways both big and small. In big picture terms, promoting the stability of a given financial system should be both an important end goal and a way to sustain the underlying societal compact and physical environment.

On an iterative, day-by-day, deal-by-deal basis, the CBI stance matters both in and beyond the EU. CBI has positioned itself to have a key role in defining an EU Green Bond Standard, which is one of a comprehensive suite of proposals that the EU High-Level Expert Group on Sustainable Finance (HLEG) made.[22] CBI considers its Climate Bonds Standard and Certification Scheme to be a ready model for the EU in establishing an "EU Green Bond label to confirm alignment" with an EU Green Bond Standard and also in developing "accreditation criteria for external review providers."[23]

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[20] See Section 4 of this working paper for a description of Moody's and S&P blueprints for, and endorsements of, flip clause swaps.

[21] See Section 7 of this working paper for: a more detailed paraphrase of the Obvion response; a scoring of the flip clause swaps that Obvion uses in RMBS deals; and analysis of the Sustainalytics report on one of the Obvion green RMBS deals.

[22] EU High-Level Expert Group on Sustainable Finance, *Financing a Sustainable European Economy* (Brussels, January 31, 2018), 30-34.

[23] Guilia Rado, *Just out: EU High-Level Expert Group on Sustainable Finance (HLEG) final report* (London, Climate Bonds Initiative, January 31, 2018).

The EU is likely to back a green bond label with real euros in the form of lower capital charges for banks that hold green bonds.[24] In turn, the real-money benefit for the EU green bond sector may embed it in the EU hierarchy of favored initiatives that draw still more direct and indirect benefits.[25]

Looking beyond the EU, the HLEG is planning for an EU green bond label to have worldwide impact.[26] Even in the US, the Trump administration, while aggressively repudiating international protocols pertaining to the environment, is keen to harmonize US regulations for swaps such as flip clause swaps with international regulations.[27]

[24] Thomas Hale, "When finance becomes a beneficiary of the green agenda," Financial Times, January 5, 2018. “Valdis Dombrovskis, vice-president of the European Commission in charge of financial regulation, said he was ‘looking positively’ at plans to lower capital requirements for banks on green investments. II “This would reduce the risk-weightings on ‘green’ investments, which essentially means that banks can fund those assets with more leverage than for other types of asset…effectively encouraging them to shift their balance sheets in a ‘green’ direction.”

[25] Ibid. “[W]hat is clear, at this stage, is that a governmental intervention on the definition of green would benefit market participants immeasurably, and precipitate a crescendo of supportive measures.”

[26] EU HLEG, *Financing a Sustainable European Economy*, 63. “Sustainable finance…provides the EU with a unique opportunity to consolidate its leadership by bringing together other countries and working with them to cooperate and promote sustainable finance policy reform at an international level.”

[27] US Department of the Treasury, A Financial System That Creates Economic Opportunities—Capital Markets, Report to President Donald J. Trump, Executive Order 13772 on Core Principles for Regulating the United States Financial System (October 2017) 134, https://www.treasury.gov/press-center/press-releases/Documents/A-Financial-System-Capital-Markets-FINAL-FINAL.pdf. “Treasury recommends that the CFTC and the SEC should: (1) make their swaps and security-based swap rules compatible with non-US jurisdictions.” Also, page 212. “The CFTC and U.S. banking regulators should work with their international counterparts to amend the uncleared margin framework so it is more appropriately tailored to the relevant risks.”

WHO STILL PROMOTES THIS HARMFUL FINANCE?

4. Code Red! Credit rating agencies claim "free speech" protects designed-to-fail deal specifications

Lose the lose-lose flip clause, an ABS original sin that rating agencies perpetuate

The author has examined ABS deals with flip clause swaps since 1999 and considers them to be among the financial instruments that most undermine financial sustainability. Each flip clause swap generates a significant capital shortfall for a given financial system by short-changing the respective ABS investors, counterparty stakeholders, and taxpayers alike.

In short, ABS deals that embed flip clause swaps belong in the dustbin of failed products along with other synthetic concoctions such as aerosol sprays, asbestos tiles, and trans fats.

Collectively, how much damage can flip clause swaps do? Without a flip clause swap, many crisis-era ABS that failed — collateralized debt obligations (CDOs), repackaged securities, RMBS, synthetic securities, and trust preferred ABS — would not have been issued in the first place. Ditto for many other crisis-era ABS that governments propped up, such as auto ABS, collateralized loan obligations (CLOs), SLABS, and deals that issued ABS in a currency other than that of the securitized assets.[28]

Can a dealmaker structure an ABS deal without a flip clause swap? Yes, a dealmaker can do so in many ways. For instance, rather than enter into a flip clause swap that references one-month and three-month interest rates for five years (financial sustainability score of -3), a dealmaker can: enter into a five-year swap with two-way margin posting and no flip clause (-1); buy a five-year option on the interest rate indices (0); securitize more assets (+1); or add cash to the deal (+2).[29] Had pre-crisis dealmakers been prevented from using flip clause swaps and instead been obligated to use an alternative tool, the collective result would have been ABS deals that were better capitalized, more expensive, and fewer in number. In turn, pre-crisis economic activity might have been slower but also more supportive of the financial system, the social compact, and the physical environment.[30]

Moody's and S&P are the largest of the handful of "usual credit rating" suspects that codify flip clause swaps into the "industry norms and market expectations" that incentivize an ABS dealmaker such as Obvion to use flip clause swaps. In fact, the respective rating blueprints (methodologies or criteria) of all credit rating agencies specify a common template for assigning AAA-ratings to senior ABS when a deal is party to a flip clause swap, even the most destructive flip clause swap such as one that exchanges two currencies for 30 years (−10).[31]

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[28] US Department of the Treasury, *Budget in Brief*, 21, https://www.treasury.gov/about/budget-performance/budget-in-brief/BIB18/FY%202018%20Treasury%20BIB%20Combined%20FINAL.PDF. The US Troubled Asset Relief Program (TARP) still draws taxpayer funds in 2018. "Currently, TARP spending is approximately $1 billion per quarter."

[29] The table in Appendix 1 of this working paper presents the hypothetical deals, the associated counterparty exposures, and other products in rank order of the respective scores from (-10) to (+10). The table also details the respective attributes that produce each score.

[30] Bill Harrington, "Existing ABS swaps also caught in swap margin net," *Debtwire ABS*, August 12, 2016.

[31] For an S&P methodology that specifies the use of flip clause swaps, see Cristina Polizu, Andrew O'Neill, Belinda Ghetti, and Felix E. Herrera, *Criteria/Structured Finance/General: Special-Purpose Vehicle Margin Requirements for Swaps—Methodology and Assumptions*, (New York: S&P Global Ratings, October 10, 2017), 9. "Currently, our counterparty criteria state that if the

However, no rating blueprints that the author has reviewed track and tally the exposures that flip clause swaps in particular or derivative contracts in general create for investors, a financial institution, or the whole financial system, i.e., the public at large.[32] This omission is intentional and leaves the broader society to underwrite the costs of derivative contracts such as flip clause swaps and other bank contracts.[33] Backed by public subsidy, ABS dealmakers avoid paying the required amounts to ensure that ABS pay investors in full and on time.

The Moody's and S&P silence regarding the pointed questions that this author posed is telling. All credit rating agencies claim an unfettered freedom of speech to "publish" rating announcements, guidance, and methodologies.[34] At the same time, all credit rating agencies limit access to the respective publications and also balk at substantiating the contents therein.[35]

The SEC backs the unsubstantiated "free speech" of Moody's, S&P, and the other rating agencies that have registered as nationally recognized statistical rating organizations (NRSROs) to the hilt.[36] Most notably, the SEC continues to shield NRSROs from a Dodd-Frank provision that subjects them to expert liability in certain instances of assigning ABS ratings.[37] Had the provision — Dodd-Frank Section 939G — taken

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derivative counterparty is in-the-money, but is the defaulting party or sole affected party, the impact of a termination payment owed to the counterparty is typically mitigated (for example, by subordination). Furthermore, the counterparty should agree that any early termination payment due will be subject to the transaction's priority of payments. Our counterparty criteria consider subordination of termination payments as one of the incentives for the counterparty to replace itself within the remedy period." Subordination of termination payments is the flip clause.

[32] Harrington, Bill, "Moody's DOJ Settlement Won't Stop Fake Rating Analysis & Derivatives Denial," posted on the author's LinkedIn.com profile, January 14, 2017. Also, Op. cit., Gaillard and Harrington (2016), 41-44 and 54-59.

[33] Bill Harrington, "Moody's bets Germany will support Deutsche Bank derivatives above all else," *Debtwire ABS*, October 12, 2016.

[34] Francesco Sangiorgi and Chester S. Spatt, "The Economics of Credit Rating Agencies (October 20, 2017)," *Foundations and Trends in Finance*, (2017), 12, 21. "The issue of liability (and whether rating agencies are financial journalists) is an interesting one." Also, footnote 25, page 22. "When one of the authors of this paper [i.e., Sangiorgi or Spatt] asked a very prominent 'First Amendment' (and rating agency) attorney as to why the rating agencies, but not [Wall Street] analysts, had First Amendment Protection, he joked that perhaps that was because the credit rating agencies had better attorneys." **N.B.** The author of this working paper is one of the few people worldwide to have worked as both a rating analyst and a financial journalist. In his view, the issue of whether rating agencies are financial journalists is not "an interesting one" but a non-starter. Financial journalists are subject to many forms of accountability. Rating agencies are subject to no accountability whatsoever.

[35] For instance, Moody's restricts public dissemination or quotations of the company's ratings, announcements, and methodologies. *See* "Terms of Use," One-Time Website Use, Moody's Investors Service. The following is part of the condition to access a rating announcement — i.e., a press release — such as one for Green STORM 2016. "Unless you have entered into an express written contract with Moody's to the contrary, you agree that you have no right to use the Information in a commercial or public setting and no right to copy it, save it, print it, sell it, or publish or distribute any portion of it in any form."

[36] The SEC Office of Credit Ratings had registered 10 credit rating agencies — A.M. Best Rating Services; DBRS; Egan-Jones Ratings; Fitch Ratings; HR Ratings de Mexico; Japan Credit Rating Agency; Kroll Bond Rating Agency; Moody's Investors Service; Morningstar Credit Ratings; and S&P Global Ratings — as NRSROs as of June 22, 2018. https://www.sec.gov/ocr/ocr-current-nrsros.html.

[37] US Securities and Exchange Commission, Response of the Office of the Chief Counsel, Division of Corporation Finance Re: Ford Motor Credit Company LLC and Ford Credit Auto Receivables Two, LLC, Incoming Letter Dated July 22, 2010 (November 23, 2010), https://www.sec.gov/divisions/corpfin/cf-noaction/2010/ford072210-1120.htm.

automatic effect on 22 July 2010 as plainly specified, NRSROs would almost certainly have retired the respective methodologies for flip clause swaps, many ABS, and other crisis-causing products.[38]

This author's research unearthed the disquieting information that the SEC acted preemptively to prevent Dodd-Frank Section 939G from taking effect. The preemption sequence — an incoming letter from two Ford Motor Company entities that requested suspension of the provision, followed by the SEC no-action letter that effectuated the suspension — appeared to be market generated but in fact was orchestrated by the SEC.[39]

The information was divulged at a credit rating conference that the Carnegie Mellon Tepper School of Business held from December 3-5, 2015.[40] A conference presenter had invited the author of this working paper owing to his having provided significant research assistance which figured prominently in the presenter's paper.[41]

In one session, this author asserted that the SEC continued to "nullify" Dodd-Frank Section 939G. Another attendee responded defensively, researched the assertion, conceded that it was accurate at a later session, and described the SEC machinations as follows. The SEC: unilaterally decided that Section 939G should never take effect; asked the Ford entities to submit a request for suspension; and then immediately issued the no-action letter before the provision was to have taken effect on July 22, 2010.[42]

The entire group assembled — academicians, financial regulators, and market practitioners — heard that the SEC had unilaterally decided to violate the clear intent of Congress as stated in the plain language of Dodd-Frank Section 939G. However, to the best of the author of this working paper's knowledge, no other

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38 Op. cit., Gaillard and Harrington (2016), 48. However, Sangiorgi and Spatt argue the opposite — namely, that Dodd-Frank Section 939G, rather than NRSRO ratings and methodologies, threaten the US financial system. See Sangiorgi and Spatt (2017) page 21. "Initially, the waiver was for six months, but when Congress failed to amend ('fix') Dodd-Frank, the SEC made the waiver permanent. One almost could construe this as an example of 'nullification' of a statutory provision by the regulator. This example also illustrates that the effectiveness of regulation is constrained by market forces, though substantial costs could arise from the wrong regulatory treatment (e.g., consider the costs to the capital markets if the SEC had not provided the waiver."

39 For the incoming letter, see Electronic letter from Ms. Susan J. Thomas, Secretary and Associate General Counsel, Ford Motor Credit Company LLC to Ms. Katherine Hsu, Senior Special Counsel, US Securities and Exchange Commission Division of Corporate Finance Re: Commission File No. 333-167489, dated July 22, 2010. The letter is posted on the SEC website.

40 "The Economics of Credit Rating Agencies, Credit Ratings and Information Intermediaries" was organized by Professor Chester S. Spatt. The Tepper website posted the itinerary ahead of the conference and for a period after it concluded; the author of this working paper retains a hard copy. Additionally, the SSRN posting of the Call for Papers of August 24, 2015, which was publicly accessible as of July 2, 2018, lists the conference topics and the following. "While much of the conference will focus upon credit rating agencies, discussion of related issues in the context of financial instruments (e.g., securitization, tranching and capital structure)…would be welcome." According to his 2016 CMU Vita, Professor Spatt, who organized an identically-titled conference at CMU Tepper in December 2016, conduced similar meetings in 2010, 2013, and 2014 in his capacity as "Principal Investor of Sloan Foundation Grant, "Credit Ratings and Credit Rating Agencies: Developing a Research Network on Markets for Financial Information," August 1, 2011–December 31, 2016."

41 The presenter's conference paper cites the author of this working paper in the acknowledgements and opens with a quotation of his in a business periodical of global record.

42 Sangiorgi and Spatt argue disingenuously that Section 939G shut down the asset-backed markets in 2010, leaving the SEC no option but to suspend the provision. See page 21. "[T]he asset-backed markets stopped functioning until the SEC waived liability." If so, the "period" of non-working ABS markets was very short. The timeline demonstrates that the sequence elapsed within a few hours on July 22, 2010.

attendee has tied the SEC decision to the glaring deficiencies in NRSRO ratings and methodologies, including those for ABS deals with flip clause swaps. In short, the academic attendees have shortchanged both their own work and their students' education in not using and building on all available information regarding: SEC policy; NRSRO ratings; ABS deal construction; flip clause swaps; the origins of the financial crisis; and the best means to avoid another one.

A more detailed description of the conference cannot be provided because most of it operated under the Chatham House Rule, which allows a participant to disclose meeting content, as well as her or his own comments, but not the identity or affiliation of any other speaker or attendee.[43] The conference organizer Professor Chester Spatt opened the academic proceedings by asking participants to observe the Chatham House Rule in light of this author's then-job as a research journalist at *Debtwire ABS*.[44]

In big picture terms, imposing the Chatham House Rule was an awkward improvisation for an academic conference, given that the participants were intensely engaged in sharing public information. Most fundamentally, the academicians were continuously presenting papers, discussing them, and alternatively recording or offering detailed feedback with the shared aim of publishing more papers and advancing their ideas.[45] Furthermore, a Tepper media person who was publicizing the conference attended several sessions and also met with this author to promote the conference and other Tepper events.

However, the challenges in respecting the spirit of the Chatham House Rule notwithstanding, the academic attendees have an obligation to their dual missions of conducting research and of teaching to synthesize conference information on SEC policy, as well as information that this author provided on flip clause swaps and NRSRO conflict of interest. That the synthesis of the information will show deeply troubling patterns of US financial regulation and sustainability makes the work doubly important to undertake.

Similar to the SEC — and arguably many academicians — the Trump administration also promotes the business interests of NRSROs to the hilt without obtaining accountability, i.e., accurate ratings, in return. Most egregiously, President Trump successfully advocated on behalf of NRSROs in trade negotiations with China in 2017.[46]

[43] "The Chatham House Rule reads as follows: 'When a meeting, or part thereof, is held under the Chatham House Rule, participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed.'"

[44] A kick-off cocktail party occurred prior to the imposition of the Chatham House Rule. One academic session was entirely off-the-record at the request of a session panelist to the author of this working paper.

[45] As example, authors who presented a paper at the 2016 conference acknowledged it in a later edition. Ramin Baghai and Bo Becker, "Reputations and Credit Ratings - Evidence from Commercial Mortgage-Backed Securities," *Swedish House of Financial Research*, Paper No. 16-21 (July 1, 2018), 1. "We are grateful for the comments and suggestions made by…Economics of Credit Rating Agencies, Credit Ratings, and Information Intermediaries conference at Carnegie Mellon University (Tepper School of Business, 2016)."

[46] Gabriel Wildau, "Fitch and S&P to launch China credit-rating units," *Financial Times*, May 25, 2018. "In a trade deal announced last May [2017] following President Xi Jinping's meeting with Donald Trump at Mar-a-Lago, China committed to allowing foreign rating agencies to operate wholly owned units on the mainland."

5. Happy 10th Anniversary! Securitization world still picking at picked-over Lehman derivatives

If a flip clause fails, and everyone hears it, will anyone make a sound?

Under the financial sustainability scale that this paper proposes, an ABS deal with a flip clause swap would merit a poor score of between (-10) and (-3). The corresponding counterparty exposure of each flip clause swap merits the worst possible score (-10).[47]

The five components of a flip clause swap — *(1) uncleared; (2) non-margined; (3) rating agency conditions; (4) replacement provisions; and (5) a flip clause* — singly and collectively enable both an ABS dealmaker and a swap counterparty to undercapitalize the respective exposures. Making a flip clause swap *balance-guaranteed* or *long-dated* increases the extent of an ABS deal's under-capitalization. Making the same type of swap a cross-currency one increases the respective under-capitalization by quantums. A dealmaker would better protect an ABS deal — and the broader financial system — by foregoing a flip clause swap altogether and increasing deal resources instead.

A dealmaker *ostensibly* uses a flip clause swap to protect ABS viz-a-viz the potential depreciation of an asset pool that can result from changes in basis rates, credits, currencies, interest rates, or prepayment rates. The scale of the potential depreciation of an asset pool is largely a function of the asset indices and maturities, relative to those of the ABS. In general, indices such as currencies and credits have larger and more persistent potential for change than interest rates and basis rates. The prepayment rates of an asset pool, which can only be guessed at, add an idiosyncratic source of potential depreciation that is expensive to offset.

For a given ABS deal with a flip clause swap, the ultimate score of between (-10) and (-3) will be a function of the size of the flip clause swap, its contract provisions such as maturity and reference index, and the credit profile of the counterparty.[48] An ABS deal with a flip clause swap that references one-month and three-month LIBOR for five years and is not balance-guaranteed might warrant a moderately bad score (-3). In contrast, an ABS deal with a balance-guaranteed flip clause swap that exchanges two currencies such as euros and USD for 35 years merits the worst possible score (-10).

A flip clause swap is little used, and even less known, outside of the global ABS sector. For instance, post-mortems of crisis-era ABS often describe the deals as having "sliced and diced" the respective securitized assets.[49] Like much jargon, the phrase *slice and dice* under-informs to such an extent that it misleads. Most pre-crisis RMBS and other ABS deals that failed did so in large part because dealmakers embedded the

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[47] The table in Appendix 1 of this working paper presents the hypothetical deals, the associated counterparty exposures, and other products in rank order of the respective scores from (-10) to (+10). The table also details the respective attributes that produce each score.

[48] Regarding the credit profile of a counterparty to a flip clause swap, see William J. Harrington, Submission to the US Commodity Futures Trading Commission "Re: RIN 3038-AD54 'Capital Requirements for Swap Dealers and Major Swap Participants'" (May 4, 2017), 43-45, 98-109 and 115-122.

[49] Brian Keeley and Patrick Love, "From Crisis to Recovery—The Causes, Course and Consequences of the Great Recession," (OECD Insights, 2010) 10. "Except, as far as the banks were concerned, they weren't really taking risks. Thanks to clever financial innovations, they were able to slice and dice loans such as Mr. Nathan's into so many tiny parts that even if he defaulted (which he did) the loss would be spread out so widely that no one would really feel it." See also Tom Worstall, "Amazingly, securitization of mortgages actually worked," *Forbes*, May 15, 2015. "The desire is to spread the risk around, to slice and dice the risk even, of lending money to people to buy houses."

deals with flip clause swaps. Before "slicing and dicing" cash flows, a crisis-era ABS deal: 1) aggregated the cash proceeds from the asset pool; 2) exchanged them with a counterparty via a flip clause swap; and 3) aggregated the *swapped* proceeds. Only after this third step is the phrase "slice and dice" accurate. The failing deals more precisely, "*sliced and diced swapped proceeds*."

In contrast, the lose-lose proposition of a flip clause swap is extremely well known by ABS practitioners globally. The Lehman bankruptcy has generated many firsthand experiences of how an ABS flip clause swap can impose systemic losses in all instances, i.e., both when a swap is in-the-money to an ABS deal and in the counter-intuitive situation when the swap is out-of-the-money. Regarding the former instances, European RMBS deals provided cases of investor losses on flip clause swaps that were in-the-money.[50] Regarding, the latter instances, a mammoth US legal proceeding provided over 200 instances of ABS deals losing money under out-of-the-money flip clause swaps.[51]

As stated earlier in this working paper, the US legal proceeding pitted the estate of Lehman Brothers against 200-plus investors, eight global too-big-to-fail institutions, and counsel at 22 law firms.[52] The case, in which Lehman lost 100% of in-the-money swap assets that had been valued at USD 1 billion, represented a fraction of the more than USD 6 billion in swap assets that Lehman lost when other flip clauses were also activated against it.[53]

The lacuna regarding ABS flip clause swaps may persist because the extremely complicated contracts mask Rube Goldberg-type contortions that enable both an ABS deal and counterparty to under-capitalize the respective exposures. Even journalists who scrutinized the structure of a notorious crisis-era flip clause swap at the center of the Greek crisis — Titlos PLC, a 2009 deal that securitized an "infamous swap agreement between the Greek bank and the country's government" — balked at scouring the relevant

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[50] Jiaxin Huang and Sanja Paic, Fitch Takes Rating Actions on Eurosail-UK 2007-4BL PLC," (London: Fitch Ratings, December 17, 2014.) "Following the bankruptcy of the transaction's EUR/GBP currency swap provider, Lehman Brothers, a stipulated claim amount of USD175m had been agreed with the issuer…The aggregated proceeds of USD116m received by the issuer represent approximately 66% of the stipulated claim amount." Eurosail-UK 2007-4BL was one of at least 14 Eurosail transactions. See also the Wikipedia entry for the legal proceedings for a second Eurosail deal, BNY Corporate Trustees Services Ltd v Eurosail-UK 2007-3BL plc. "The insufficiency of assets which caused concern was the inability of Lehman Brothers as swap counterparty to make payments under the swaps."

[51] Lehman Brothers Special Financing Inc. v. Bank of America NA (In re Lehman Brothers Holdings Inc.), 2016, 11.

[52] Dave Simpson, "Bankruptcy Court's Block Of $1B Lehman Clawback Upheld,' *Law360*, March 14, 2018. **"The noteholders are represented by** [bold added] Ballard Spahr LLP, Chaffetz Lindsey LLP, Chapman and Cutler LLP, Cleary Gottlieb Steen & Hamilton LLP, Cravath Swaine & Moore LLP, Gray Plant Mooty Mooty & Bennett PA, Hogan Lovells, Hunton & Williams LLP, Jackson Walker LLP, K&L Gates LLP, Kleinberg Kaplan Wolff & Cohen PC, Locke Lord LLP, McCarter & English LLP, McGuire Woods LLP, Morgan Lewis & Bockius LLP, Munger Tolles & Olson LLP, Nixon Peabody LLP, Olshan Frome Wolosky LLP, Reed Smith LLP, Seward & Kissel LLP, Sidley Austin LLP and Wuersch & Gering LLP." **Separately, *Law360* lists the following 30 entities as current or former parties to the suit:** Security Benefit; Citigroup; Shenandoah Life Insurance; MoneyGram; Morgan Stanley; State Street Global Advisors; Susquehanna Bancshares; MBIA; BONY Mellon; Marsh & Mclennan; Diversey Holdings; Bank of America; Modern Woodmen of America; U.S. Bancorp; UniCredit; AIG; Valeo; Natixis; New York Racing Association; Wells Fargo; BB&T; SCOR; Goldman Sachs; Euroclear; Sentinel Management; Deutsche Bank; Reinsurance Group of America; Principal Financial; JPMorgan Chase; and Credit Suisse.

[53] Cara Salvatore, "Lehman Seeks To Force Defendant Class In $3B Derivative Suit," *Law360*, October 28, 2014. Lehman asked a federal judge "to certify a 150-defendant class in Lehman's suit claiming that a crucial contract clause destroyed $3 billion worth of its payment rights." The Lehman request grew from one of two 2010 complaints regarding ABS flip clause swaps. In the second, Lehman "sought more than $3 billion from a slew of banks and noteholders."

Moody's methodology for the flip clause component.[54] Post-crisis reporting on the intrinsic shortcomings of flip clause swaps such as the failed "replacement" assumption focused on the inconvenience to bankers rather than the harms to investors, swap counterparties, and the financial system.[55]

[54] Tracy Alloway, "Titlos and Greek currency swap titillation," *Financial Times*, February 16, 2010. "Without having gone through the terms of the deal and the full 46-page Moody's criteria in detail, and consulting some securitization lawyer-types, it's difficult…to speculate." Also, Tyler Durden and Marla Singer, "Is Titlos PLC (Special Purpose Vehicle) the Downgrade Catalyst Trigger Which Will Destroy Greece," *Zero Hedge*, February 15, 2010. "[W]e decided to dig into Moody's [criteria]… The full 46 page report can be found here for those who have gobs of time… Luckily, law firm Orrick has provided a cliff notes version." Durden and Singer discussed many aspects of the criteria but not the flip clause. **N.B.** The author of this working paper was a co-author and lead developer of the 46-page Moody's criteria.

[55] Tracy Alloway, "Counterparties feel effect of bank downgrades," *Financial Times*, June 29, 2012. "This is making the triple-A almost unreachable in the current environment," an ABS dealmaker was reported as saying.

GRADING DEALS AND DERIVATIVE COUNTERPARTIES

6. Sustainability analysis: Mapping financial minefields, step-by-careful-step

Cracking open the hollow flip clause: Where's the money?

On its own, the flip clause component of a flip clause swap enables an ABS dealmaker and a swap counterparty to vastly under-capitalize the respective swap exposures. For this reason, few ABS dealmakers around the world are party to a swap *without* a flip clause. In contrast, few sectors apart from the global ABS sector place flip clauses or other "walkaway" provisions in swaps.[56]

Under a standard flip clause, an ABS priority of payments (waterfall) specifies that a deal pay a swap counterparty in one of two places based on whether the counterparty is performing or, alternatively, is insolvent, bankrupt, or similarly impaired. The deal pays the counterparty at a very senior position while the counterparty is performing, but permanently "flips" the payment to a deeply subordinated position once the counterparty has defaulted, entered bankruptcy, or experienced similar impairment.

This change to a deeply subordinated position from a very senior position in the waterfall is the "flip."[57] Two ABS deals — an Obvion RMBS deal and a Navient SLABS deal — provide real world examples.

The pre-sale report for the Obvion RMBS deal Green STORM 2018 BV lists the swap counterparty Obvion on page 7 and the fifteen steps in the priority of payments (or waterfall) on page 17.[58] Two of the fifteen waterfall steps — the third and the last — are the payments to the swap counterparty. Together, the two steps constitute the deal's flip clause. At the third waterfall step, the deal pays all amounts to the swap counterparty, *except* for the "swap counterparty's default payment." It is paid at the final waterfall step, which is labelled "other subordinated amounts."

Similarly, the servicing report for SLM Student Loan Trust 2004-10, a Navient SLABS deal, lists the swap counterparty AIG Financial Products on page 13 and the 16 waterfall steps in the priority of payments on page 7.[59] Two of the 16 waterfall steps — the fourth ("D") and the thirteenth ("M") — specify payments to the swap counterparty. Together, the two steps constitute the deal's flip clause. At the fourth waterfall step, the deal pays the counterparty swap periodic payments ("D.ii") and swap termination amounts ("D.iii"), *except* with respect to a termination that resulted from the counterparty's default. This amount is paid at the thirteenth waterfall step, which is labelled "remaining swap termination fees."

A flip clause *ostensibly* ensures that that a deal will pay all amounts owed to a counterparty for so long as it performs and no amounts otherwise, e.g., after the counterparty has entered bankruptcy. By itself, a deal's

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[56] In fact, walkaway provisions are not enforceable against either the FDIC when acting as receiver or conservator of a range of financial entities or against the FHFA when acting as a receiver or conservator of Fannie Mae, Freddie Mac, or a federal home loan bank. See William J. Harrington, [Submission to the US Commodity Futures Trading Commission "Re: RIN 3038-AD54 'Capital Requirements for Swap Dealers and Major Swap Participants'"]() (May 4, 2017), 28, including footnote 39.

[57] Michael Venditto and Andrea Pincus, "Lehman Tries to Flip its Flop on the Flip Clause," *INSOL international News Update*, Reed Smith, June 2017, http://www.insol.org/emailer/June_2017_downloads/Doc1a.pdf.

[58] Irina Penkina and Nayan Savla, *Pre-Sale: Green STORM 2018 BV* (Moscow: S&P Global Ratings, May 14, 2018), 6 and 17-18. The report provides information that identifies the flip clause swap as "balance-guaranteed" under "Hedging Risk," page 18. "The swap notional is the class A to E notes' balance, minus realized losses not cured by excess spread."

[59] SLM Student Loan Trust 2004-10, Quarterly Servicing Report for the Collection Period January 1, 2018 to March 31, 2018, 7 and 13. https://navient.com/assets/about/investors/debtasset/SLM-Loan-Trusts/01-05/2004-10/0410QT0318c.pdf.

bifurcated obligation to pay a counterparty undermines financial sustainability unless the counterparty fully capitalizes its post-default exposure, i.e., sets aside capital equal to 100% of flip clause swap assets.

In practice, no counterparty is likely to pay the substantial cost of setting aside capital equal to 100% of flip clause swaps that are assets for two reasons.[60] Most importantly, no flip clause counterparty is required to do so.[61] Secondly, a flip clause is not enforceable in all legal jurisdictions.[62] The uncertainty of the legal status of a flip clause gives a counterparty a fig leaf to capitalize a flip clause swap in the same manner as a similar swap without a flip clause.

However, the zero-sum nature of a flip clause means that its non-enforceability would fully transfer the risk of 100% loss of swap value to an ABS deal. Moreover, litigating the enforceability of a flip clause would impose new costs of time and money on both a deal and a counterparty.

The first point is not intuitive and bears repeating. *The potential non-enforceability of a flip clause exposes an ABS deal to losses in the counterintuitive case when a flip clause swap is an out-of-the-money liability to the deal (and, conversely, an in-the-money asset to the swap counterparty).* The second point, namely that litigating an untested swap provision will cost all parties significant time and money, has been playing out in Lehman bankruptcy cases since 2008.

In short, a flip clause creates lose-lose outcomes for all parties, as Lehman cases in the US and UK have demonstrated since 2009. Some ABS deals lost money directly from one of two US *rulings that struck down flip clauses* in 2010 and 2011, respectively.[63] Other ABS deals lost money by settling with the Lehman estate in the aftermath of the rulings.[64]

At the same time, the Lehman estate lost money directly in *two cases that upheld flip clauses*. The first case was a UK case decided in 2009 and affirmed by the UK Supreme Court affirmed in 2011.[65] The second cases was a US case that was decided in 2016 and affirmed on appeal on March 14, 2018.[66] The Lehman estate

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[60] William J. Harrington, Submission to the US Commodity Futures Trading Commission "Re: RIN 3038-AD54 'Capital Requirements for Swap Dealers and Major Swap Participants'" (May 4, 2017), 2-12 and 98-109.

[61] US Commodity Futures and Trading Commission, *Capital Requirements of Swap Dealers and Major Swap Participants*, [Federal Register, Vol. 81, No. 242, (December 16, 2016)], 91252-91333. https://www.gpo.gov/fdsys/granule/FR-2016-12-16/2016-29368. The CFTC proposed capital treatments for an uncleared swap that did not distinguish between one with a flip clause and one without a flip clause. In response, the author of this working paper counter-proposed a much higher capital treatment for an uncleared swap with a flip clause. See preceding footnote.

[62] *Moody's Approach to Assessing Counterparty Risks in Structured Finance* (Global Distribution: Moody's Investors Service, July 26, 2017), Footnote 115, page 49. "…or uncertainty as to whether a flip clause is legally enforceable…"

[63] Lehman Brothers Special Financing Inc. v. Bank of New York Corp. Trustee Services. Ltd., 2010 and Lehman Brothers Special Financing Inc. v. Ballyrock ABS CDO 2007-1 Ltd (In re Lehman Bros. Holdings Inc.), 2011, respectively.

[64] Cara Salvatore, "Lehman Settles Dispute Over $40M Swap Fund," *Law360*, April 6, 2015. The article describes a settlement that a deal trustee and Lehman reached more than five years after the 2010 decision.

[65] Belmont Park Investments PTY Ltd vs. BNY Corp. Trustee Services, Ltd, [2011]. 10. "The total outstanding under those nine series of Notes is approximately A$250.23m (approximately £155m)." The case facts also demonstrate that flip clause "documentation is complex," pages 7-9.

[66] Lehman Brothers Special Financing Inc. vs. Bank of America National Association, et al. (In re: Lehman Brothers Holding Inc), 2016 and Lehman Brothers Special Financing Inc. vs. Bank of America National Association, et al. (In re: Lehman Brothers Holding Inc), 2018, respectively.

may again appeal the latter case. Regardless, it is a prime example of the lose-lose proposition that a flip clause presents to all involved.[67]

7. Poor score to Obvion Green STORM RMBS (-7); Worst score to the Rabobank swap backstops (-10)

Rabobank backstops Euro 17 billion of Obvion STORM flip clause swaps

European originators of residential mortgages finance them in part with RMBS deals that hew closely to credit rating methodologies.[68] As a result, European RMBS deals have components such as flip clause swaps that were common in pre-crisis European deals.[69]

Originators of European RMBS deals, both green and non-green alike, use flip clause swaps for the same reason that pre-crisis, US counterparts did; namely as a cheap way to *partially* protect floating-rate RMBS against the relative depreciation of securitized, fixed-rate mortgages.[70] Similarly, originators of European CLOs, both ESG and non-ESG alike, use flip clause swaps as a cheap way to *partially* protect CLO debt from the relative depreciation of securitized assets owing to interest rate, currency, or credit exposures.[71] The financial sustainability scores for the CLOs range from bad (-4) to the worst possible (-10), depending on the type of potential depreciation that the flip clause swaps address, as well as other deal attributes.[72]

EU policy facilitates dealmakers in embedding flip clause swaps in ABS deals. The policy, which is one of many that the EU promotes to boost economic growth, presumably reflects a social compact in which taxpayers understand that they might periodically bailout finance and other sectors. The potential costs that undercapitalized ABS and swap counterparties can impose tomorrow — investment losses, bailouts,

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67 Cara Salvatore, "Lehman Seeks To Force Defendant Class In $3B Derivative Suit," *Law360*, October 28, 2014. "In September 2010, LBSF sought billions of dollars from a long list of banks and a putative defendant class of noteholders in a pair of adversary suits over derivative transactions, when it filed for bankruptcy it was stripped of priority payment status." Also, Carmen Germaine, "Lehman Sues US Bank Over Terminated Interest Rate Swap," *Law360*, September 21, 2015.

68 Two Fitch criteria for European RMBS apply to residential mortgages originated in 16 countries — Belgium Cyprus, Denmark, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland, and the UK. See: Grant England et al., *European RMBS Rating Criteria* (London: Fitch Ratings, February 2, 2018), 1; and Sanja Paic et al., *EMEA RMBS Rating Criteria* (London: Fitch Ratings, October 27, 2017), 1.

69 "Moody's Assigns Definitive Ratings to Dutch RMBS issued by STORM 2008 BV," December 5, 2008. "In contrast to other Dutch transactions the swap arrangement does not guarantee excess spread."

70 Post-crisis US RMBS deals generally do not have flip clause swaps. One reason may be that post-crisis demand for US RMBS is small compared to pre-crisis levels and can be satisfied with fixed-rate, rather than floating-rate, RMBS.

71 "Debut manager prices first ever CLO featuring ESG criteria," *Creditflux*, March 1, 2018. "Providus CLO I is believed to be the first CLO issued with ESG…eligibility criteria written into its documentation. Sources say the CLO will be restricted from investing in specified industries, such as tobacco and gambling." For the deal's flip clause, see Brian Nolan and Jekaterina Muhametova, "New Issue: Providus CLO I DAC," (London: S&P Global Ratings, April 11, 2018) 18-19. Table 15 "Waterfall Payment Priority" specifies the flip clause in Priority Nos. 5 ("i) Scheduled periodic hedge issuer payments, and any hedge termination payments; ii) Hedge replacement payments"); and 24 (" iii) Any payments in relation to a defaulted hedge counterparty.")

72 The table in Appendix 1 of this working paper presents the Providus CLO, other deals, and the associated counterparty exposures in rank order of the respective scores from (-10) to (+10). The table also details the respective attributes that produce each score.

and societal discord — are acceptable trades-off given the benefits that an expanding economy generates today.[73]

Obvion has securitized Dutch residential mortgages that it originated into 41 RMBS deals since 2008 via the company's STORM program.[74] Obvion is a wholly owned subsidiary of Rabobank, the large Dutch financial cooperative. At least 18 STORM deals with an aggregate par of euro 17 billion RMBS remain outstanding.[75]

The Obvion mortgages and STORM RMBS are all euro-denominated. However, the mortgages generally pay fixed interest rates and the corresponding RMBS generally pay floating rate coupons. To offset the mismatch, each STORM deal has a nearly identical flip clause swap with Obvion as counterparty and Rabobank as backup counterparty. Under each swap, a STORM deal pays the fixed rates of the securitized mortgages to Obvion and receives floating rates to pay the RMBS.

Three STORM deals — Green STORM 2016 BV, Green STORM 2017 BV, and Green STORM 2018 BV — apply proceeds consistent with ICMA Green Bond Principles. Sustainalytics has published opinions that each of the three Green STORM deals are likely to discharge the green commitments to a high standard.[76] Completing the green circle, the CBI webpage for Obvion cites the Sustainalytics reports.[77]

Sustainalytics evaluated the corporate governance of Obvion, the STORM program, and Rabobank in reviewing the Green STORM deals.[78] The report on Green STORM 2018 offered an assessment of Rabobank governance. "Based on Sustainalytics' ESG research, Rabobank is assessed as a leader among its banking peers. Although Rabobank has faced some business ethics issues in recent years, it demonstrates strong performance on the key issues of responsible finance and financial product governance."[79] The poor scores for the three Green STORM deals and the 15 other STORM deals (-7), as well as the worst possible scores for each of the corresponding 18 swap exposures that attach to Obvion and Rabobank (-10), tell a

[73] EU policymakers may be re-examining the flip clause tradeoff as they consider a European Commission proposal for ABS deals to incorporate two-way margin posting in new swaps. Chris Godwin and Tim Finlay, "Structurers consider the prospect of variation margin rules for ABS swaps," *Finance and Markets Global Insight*, No. 13, 4-9. (London: DLA Piper, September 2017). However, a source of the author of this working paper dismissed the proposal as "dead in the water."

[74] Irina Penkina and Nayan Savla, *Pre-Sale: Green STORM 2018 BV* (Moscow: S&P Global Ratings, May 14, 2018), 3.

[75] Author's estimate as of June 5, 2018, based on review of the respective rating agency announcements and reports for 18 outstanding STORM, GREEN STORM and PURPLE STORM RMBS deals. For the rating announcement of a 2018 deal, see "Moody's assigns definitive ratings to five classes of Dutch RMBS notes issued by Green STORM 2018 B.V." of May 30, 2018. For the rating announcement of a 2012 deal, see "Moody's assigns definitive ratings to five classes of Dutch RMBS notes issued by STORM 2012-V B.V." of October 17, 2012.

[76] Farnam Bidgoli and Tim Langer, *Green Storm 2016, Obvion: Framework Overview and Second-Party Review* (London: Sustainalytics, May 2016). Catarina da Silva and Willem van Golstein Brouwers, *Green Storm 2017 Obvion: Framework Overview and Second-Party Review* (London: Sustainalytics, May 10, 2017). Charlotte Peyraud, Trisha Taneja, and Mihai Cojocaru, Obvion Green STORM 2018, Framework Overview and Second-Party Review, (London: Sustainalytics, May 2018).

[77] Climate Bonds Initiative, "Obvion," accessed on June 22, 2015, https://www.climatebonds.net/standards/latest-certifications/obvion.

[78] Charlotte Peyraud, Trisha Taneja, and Mihai Cojocaru, Obvion Green STORM 2018, Framework Overview and Second-Party Review, (London: Sustainalytics, May 2018), 2. "Sustainalytics has held conversations with both Obvion's treasury team and Rabobank's sustainability and capital markets structuring teams to understand the use of proceeds, management of proceeds and reporting aspects of this transaction, as well as the sustainability strategy of the Rabobank Group."

[79] Ibid., 4.

diametrically different story. In short, Rabobank demonstrates *weak* “performance on the issues of responsible finance and financial product governance.”[80]

At first glance, the single-currency interest rate swap in each STORM deal seems to be among the less destructive type of flip clause swaps. However, the swaps have at least four components that render the respective deals under-capitalized and entirely reliant on Obvion as counterparty, Rabobank as backup counterparty, and ultimately Dutch and EU taxpayers. Specifically, each flip clause swap: 1) is balance-guaranteed; 2) covers the entire deal; 3) includes a running payment by Obvion of up to 0.50%; and 4) has a final maturity of up to 48 years.[81] Hence, the poor deal scores (-7).

Initially, Obvion and Rabobank financial staff were eager to discuss the Euro 17 billion of STORM flip clause swaps in light of the questions that the author of this working paper posed to Obvion and to CBI, Moody’s, S&P, and Sustainalytics on December 4, 2017.[82] An Obvion risk manager asked for an extension of the response deadline to December 8 so that Rabobank managers could be included in a conference call with this author and Croatan colleagues.

However, the Obvion and Rabobank eagerness quickly evaporated and the companies canceled the conference call at the last minute. In emailing the cancellation, the Obvion point person ignored the impact of the flip clause swaps on the sustainability of the Dutch and EU financial systems and instead offered a narrow view of “responsible finance and financial product governance.”

This narrow view is paraphrased as follows because Obvion and Rabobank asked that no email correspondence be quoted. *Obvion and Rabobank rely on flip clause swaps to package and sell STORM RMBS but have no responsibility to assess the impact of the swaps on the sustainability of the Dutch or EU financial systems. Instead, Obvion and Rabobank only go so far as to assert that embedding flip clause swaps in STORM RMBS is consistent with the respective companies’ guidelines, controls, audit standards, and risk management. Neither Obvion nor Rabobank believes that it should do anything more to help investors or the broader society understand flip clause swaps. After all, the presence of flip clause swaps is fully disclosed in the respective deal documents and marketing information. Any investor or other person can verify the adequacy of disclosures regarding the presence of flip clause swaps and other sources of potential RMBS losses by reviewing the publicly available, highly technical deal documents and also by using www.dutchsecuritisation.nl.*

[80] The table in Appendix 1 of this working paper presents the 18 STORM RMBS deals, other deals, and the associated counterparty exposures in rank order of the respective scores. The table also provides rationales for each pair of deal and counterparty scores.

[81] Irina Penkina and Nayan Savla, *Pre-Sale: Green STORM 2018 BV* (Moscow: S&P Global Ratings, May 14, 2018), 18. Regarding the first of the four components — the balance guarantee component — note that swap payments can be described only by reference to the deal’s evolution. “Green STORM 2018 will pay to the swap counterparty the scheduled interest due on the mortgages and the transaction account, plus received prepayment penalties, less senior fees and expenses the issuer owes, less excess spread of 0.50% per year of the principal amount outstanding of each class of notes. II “In turn, Obvion will pay to Green STORM 2018 the interest due on…the class A to E notes' balance, minus realized losses not cured by excess spread.”

[82] The emailed questions of December 4, 2017 are available on the author’s LinkedIn profile. See William J. Harrington, *GREEN STORM RMBS and ABS Flip Clause Swaps* (February 28, 2018). The author also invited the five entities to comment on a late stage draft of this working paper in a group email of June 25, 2018.

In short, owners of STORM RMBS, Dutch financial authorities, and Dutch society as a whole have only themselves to blame for STORM flip clause swaps, at least according to Obvion and Rabobank.

8. Rating agencies, which say worst possible score (-10) = AAA, also inflate green assessments

Rating agencies to Dutch taxpayers: You backstop the Rabobank backstops of Obvion flip clause swaps

S&P assigns credit ratings, but not green bond assessments, to most RMBS from the three Green STORM deals. S&P also partners with CBI in operating the S&P Green Bond Index.[83] The index contains ABS, including all tranches of Green STORM 2016, Green STORM 2017, and (most likely, in the near future) Green STORM 2018.[84]

Like S&P, Moody's assigns credit ratings to most RMBS of the three Green STORM deals, in part by assessing the likelihood that the Dutch government will support the many Rabobank obligations to the deals, including that of back-up counterparty to the respective flip clause swaps. Moody's also provides a green bond assessment of the three deals — the assessment of Green STORM 2016 was Moody's first such assessment. The Green STORM deals and the 24 green deals from other companies that Moody's had assessed as of mid-2017 all received the highest green bond assessment of "GB1 grade (Excellent)." Similarly, S&P also assigns predominately strong green bond assessments.[85]

Moody's and S&P also assign very high credit ratings such as AAA to most STORM RMBS, including the Green STORM RMBS.[86] However, despite the deep knowledge that Moody's and S&P have of the deal structures, neither company characterizes financial sustainability as a green bond criterion or concern. In fact, the rating agencies do just the opposite — namely, undermine financial sustainability by leveraging the expectation that the Dutch and other EU governments will support Rabobank derivative contracts and backstop obligations if necessary — to justify the superlative credit ratings.[87]

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[83] Dennis Badlyans, "Rising Above The Noise In ESG: Green Bonds," *Seeking Alpha*, December 25, 2017. Regarding the selection of bonds for the S&P Green Bond Index, "S&P DJI partners with the Climate Bond Initiative, which certifies and monitors the usage of proceeds on an ongoing basis. This approach is straightforward and doesn't require the sophisticated analysis of a company's behavior."

[84] As of April 10, the S&P Green Bond Index contained 3,000-plus bonds, including the five respective tranches of both Green STORM 2016 and Green STORM 2017. S&P Index Services, '06693934: Client Services Request Form [ref:_00D30aXa._5001W1GnFiy:ref]', email (April 10, 2018). Green STORM 2018 RMBS have only been eligible for inclusion in the index since the deal closed on May 30.

[85] Torsten Ehlers and Frank Packer, "Green bond finance and certification," *BIS Quarterly Review* (September 2017): 98, Footnote 10. Moody's and S&P green bond assessments "have so far tended to be at one end of the spectrum: for instance, the 26 bond issues with Moody's GBAs as of end-July 2017 were all at the highest level (GB1)."

[86] For Green STORM 2016, S&P and Moody's rate the Class A notes, which comprise 96% of the deal, as AAA and Aaa, respectively. Also, S&P and Moody's rate the Class B notes as AA+ and Aa1, respectively, and the Class C notes as AA and Aa2, respectively. Likewise, for Green STORM 2017, S&P and Moody's rate the Class A notes as AAA and Aaa, respectively, and the Class B notes as AA+ and Aa1, respectively.

[87] Bill Harrington, "Moody's bets Germany will support Deutsche Bank derivatives above all else," *Debtwire ABS*, October 12, 2016. Op. cit., Gaillard and Harrington (2016), *57-59*.

Moody's explicitly assumes government support for all Rabobank contracts, including derivative contracts such as flip clause swaps, by assigning Rabobank a "*counterparty risk assessment*" of Aa2, which is one notch above the company's long-term deposit and senior unsecured ratings of Aa3.[88] In turn, Moody's uses the higher counterparty risk assessment for Rabobank, rather than either of the lower debt or deposit ratings, as an input in all STORM RMBS ratings, including those of the three Green STORM deals. As a result, Obvion can sell more RMBS with less capital than if Moody's rated the RMBS without using a bailout assumption.

Moody's uses the same scheme — assigning a high counterparty risk assessment to all contracts of a financial institution based on the expectation of government support, then inputting the assessment into ABS rating assumptions — for most ABS around the world.[89] As a result, ABS deal makers around the world can sell more under-capitalized ABS than if Moody's rated the ABS without using a bailout assumption.

88 Moody's downgraded many Rabobank ratings on March 27, 2018. See the Moody's announcement, "Rating action: Moody's downgrades Rabobank's long term ratings to Aa3 stable outlook," March 27, 2018.

89 Bill Harrington, "Moody's bets Germany will support Deutsche Bank derivatives above all else," *Debtwire ABS*, October 12, 2016. "'Obligations and commitments that CR Assessments typically take into account include payment obligations associated with covered bonds (and certain other secured transactions), derivatives, letters of credit, third party guarantees, servicing and trustee obligations and other similar operational obligations that arise from a bank in performing its essential customer-serving operating functions.'"

9. Keep the Dodd-Frank Act to keep sustaining US finance

Post-crisis US ABS: Lots of CLO flip clauses (-4); but few flip clause swaps (Great!)

US society decided against propping up big financial institutions. People do not want to bailout or otherwise support the financial sector again. Policy makers heard the message loud and clear and often heeded it (at least until 2017). In two interrelated examples, US banking regulators and the CFTC each adopted a complementary set of rules for swap margin posting in Q4 2015. The two rule sets have many identical provisions, including a stipulation that a swap provider and a financial entity such as an ABS deal only enter into a new swap that stipulates the two-way posting of daily margin from the outset.[90] The admirably constructive requirement, which applies to all swaps entered into on or after March 1, 2017, has established better swap practices in all financial sectors, e.g., by entirely ruling out new flip clause swaps in the ABS sector.[91] Overall, margin posting is great news for the sustainability of the US financial system.

The two-way exchange of daily margin boosts the sustainability of a financial system by requiring a swap provider and an ABS dealmaker to fully capitalize the respective exposures of a swap and, by so doing, to improve the capitalization of the associated ABS deal.[92] Compared with flip clause swaps, margin posting swaps produce: 1) more robust, albeit also most costly, ABS deals; 2) better capitalized swap providers; 3) a stronger financial system with lower bailout risk; and 4) higher financial sustainability scores all around.[93]

Other deal attributes aside, an ABS deal that is party to a margin posting swap may have an almost neutral score (-1), compared to the lower range of (-10) to (-3) for a deal that is party to a flip clause swap. Similarly, a swap provider will have a much-improved score for a margin posting swap with an ABS deal (-1), compared to the worst possible score for a flip clause swap (-10).

In even better news for US financial sustainability, dealmakers in most US ABS sectors such as RMBS have foregone swaps altogether since the financial crisis. Some dealmakers buy options rather than enter into a swap, but the majority add no derivative contract at all to a deal. Setting aside other deal attributes, an ABS deal with one or more options and no swap can merit a neutral score (0). Better still for financial sustainability, an ABS deal that neither owns options nor is party to a swap can merit a good score (+3).[94]

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[90] US Commodity Futures Trading Commission, *Margin Requirements for Uncleared Swaps for Swap Dealers and Major Swap Participants* (Dec. 18, 2015), [81 Fed. Reg. 636 (Jan. 6, 2016)], https://www.gpo.gov/fdsys/granule/FR-2016-01-06/2015-32320. Prudential Regulators, *Margin and Capital Requirements for Covered Swap Entities* [80 Fed. Reg. 74840] (Nov. 30, 2015), https://www.gpo.gov/fdsys/pkg/FR-2015-11-30/pdf/2015-28671.pdf.

[91] Margin posting eliminates the "non-margined" character of a flip clause swap, which in turn eliminates the rationale for three remaining attributes: rating agency condition; replacement; and a flip clause.

[92] Apart from a swap, other ABS deal attributes such as maturity, securitized assets, and ratings also determine the adequate level of capitalization.

[93] Bill Harrington, "Existing ABS swaps also caught in swap margin net," *Debtwire ABS*, August 12, 2016. "Won't margin posting by both an ABS issuer and a swap provider force deals to capitalize to reflect the risks to noteholders and allow them to decide whether to accept less risk and reward or vice-versa?"

[94] The table in Appendix 1 of this working paper presents the deals scored in this section, other deals, and the associated counterparty exposures in rank order of the respective scores from (-10) to (+10). The table also provides rationales for each pair of deal and counterparty scores.

10. Green around the gills: US CLOs and student loan ABS drip with flip clauses (-10)

Industry overboard! Very poor scores reveal yet more societal costs from Navient SLABS

The US SLABS sector is one of the few US ABS sectors where a significant number of deals retain flip clause swaps. Within the sector, the far and away largest company Navient is also the far and away most reliant on flip clause swaps. For instance, the company embedded a flip clause swap in a deal that closed in January 2016, i.e., *after* the US regulators had adopted the two sets of swap margin rules but before the common effective date of March 1, 2017.[95] The deal merits a bad score (-5), as do 21 earlier Navient deals with the same type of flip clause swap — a long-dated, balance-guaranteed swap that references the Prime rate and 3-month LIBOR.

In fact, a determination of whether Navient is solvent may rest on how robustly an analyst treats the discredited rating assumption of replacement for flip clause swaps.[96] Navient owns USD 27bn in student loans that are securitized in one of 38 SLABS deals that are party to a flip clause swap. In addition to the 22 deals with a bad score (-5), another nine are party to the most unsustainable type of flip clause swap, namely one that is: cross-currency, balance-guaranteed; and extremely long-dated to 2041 or further. The nine deals have the worst possible score (-10).[97]

The US CLO sector has also used flip clause swaps since the financial crisis but has done so more circuitously than Navient. For instance, dealmakers have sold many new, AAA-rated CLO tranches directly into a second security denominated in Japanese yen, added a flip clause swap but no additional resources, and still obtained a pass-through of the AAA-rating.[98] Technically, the repackaged foreign securities and not the underlying CLO debt are party to the respective flip clause swaps, which are cross-currency, balance-guaranteed, and medium-to-long term. The two layers of CLO ownership, along with the flip clause swap,

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[95] William J. Harrington, *Electronic Letter to CFTC Secretary Christopher Kirkpatrick Re: CFTC Letter No. 17-52* (February 2, 2018), 16-17. Wikirating.org posted this letter on February 3, 2018.

[96] Bill Harrington, "Fitch Ratings Review of Navient Solvency & Swap Losses on USD 5B of SLABS Residuals," posted on this author's LinkedIn.com profile, September 20, 2017. This author shared the analysis with five NRSRO analysts and eight equity analysts who assess Navient credit and stock performance. Also, William J. Harrington, Electronic Mail to S&P Global Analysts and the US Securities and Exchange Commission Offices of Credit Ratings, the Investor Advocate, and the Whistleblower Re: S&P Violations of SEC rules in Rating US CLOs with Waterfall Flip Clauses, US SLABS with Flip Clause Swaps and Navient, email, (May 10, 2018). Wikirating.org posted this email on May 22, 2018.

[97] Author's estimate as of June 5, 2018, based on review of the respective deal reports on the Navient website. Navient, "Investors, Asset-Backed Securities, https://navient.com/about/investors/debtasset/.

[98] Lisa Abromowicz, "American-Made Junk CLOs Now Being Served in Yield-Starved Japan," Bloomberg, April 16, 2015. "To make it easier for Japanese investors to get to this US debt, bankers have repackaged a dollar-denominated [CLO] into yen-denominated bonds, using derivatives [i.e., flip clause swaps] to hedge out risk related to currency fluctuations." For two rating reports on a CLO repackaging, see "Moody's assigns a rating to one class of notes issued by Repackaged CLO Series GG-A1, Ltd., a repackaging transaction," April 15, 2015 and the S&P report "Presale: Repackaged CLO Series GG-A1 Ltd," March 24, 2015.

increase the extent of capital shortfall relative to the AAA-rating.[99] The repackaged CLOs and produce the worst possible score (-10).[100]

In a parallel instance of swap ratings that are top-heavy, self-referencing, and self-serving, Moody's also inflates the "counterparty instrument rating" of a counterparty exposure to a given flip clause swap, including several in repackaged CLOs.[101] Moody's implements the rating inflation by ring-fencing the definition of a *counterparty instrument rating* (which is distinct from the *counterparty risk assessment*) to exclude basic features of a flip clause swap.[102] The highly caveated nature of a counterparty instrument rating enables Moody's to assign a generally high rating of A3 or above to a flip clause swap. The comparatively high level of a Moody's counterparty instrument rating, its cherry-picked nature notwithstanding, enables a counterparty to hold significantly less capital against the swap than if it was rated accurately or, alternatively, not rated at all.

In contrast, a financial sustainability score reflects all counterparty exposure to a flip clause swap; hence, the worst possible score for each such exposure (-10). To correctly capitalize a flip clause swap, rather than do so on the cheap using Moody's counterparty instrument rating, a counterparty must set aside capital equal to 100% of swap mark-to-market at all times.[103]

11. Grading the US push to reverse Dodd-Frank and revive crisis-causing mortgage deals

US RMBS and CLO sectors both pushing to revive flip clause swaps

A sizeable number of CLO dealmakers have also been betting on a revival of flip clause swaps, as evidenced by their placing flip clauses in the priorities of payments of new deals. The deals are not yet party to flip clause swaps owing to the US swap margin rules. However, the flip clauses, which are presumably placeholders should the US bank regulators and the CFTC exempt CLO deals from the swap margin rules at a later date, represent a clear-cut choice and not happenstance.[104] Many new CLOs have flip clauses and the

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[99] The loss targets for AAA ABS are infinitesimally and unrealistically small. See Bill Harrington, "Moody's bets Germany will support Deutsche Bank derivatives above all else," Debtwire ABS, October 12, 2016. Op. cit., Gaillard and Harrington (2016), 41 (Footnote 21) and 58.

[100] The table in Appendix 1 of this working paper presents the 31 Navient deals, seven other Navient deals, repackaged CLOs, other deals, and the associated counterparty exposures in rank order of the respective scores from (-10) to (+10). The table also provides rationales for each pair of deal and counterparty scores.

[101] The Moody's rationale for a counterparty instrument rating is circular in that it both carves out the risk of 100% loss of swap asset under the flip clause and builds off the associated ABS ratings, which also carve out the risk of flip clause losses. Of the three, intertwined, Moody's flip clause ratings and assessments — 1) ABS ratings; 2) a counterparty instrument rating; and 3) a counterparty risk assessment — none incorporates flip clause losses. See "Moody's assigns Counterparty Instrument Rating to Repackaged CLO Series CL 2014-2, Ltd. Currency Swap Agreement," March 6, 2015.

[102] Op. cit., Gaillard and Harrington (2016), 41. Footnotes 22 and 24 describe Moody's counterparty risk assessment. Footnote 23 describes Moody's counterparty instrument rating.

[103] William J. Harrington, Submission to the US Commodity Futures Trading Commission "Re: RIN 3038-AD54 'Capital Requirements for Swap Dealers and Major Swap Participants'" (May 4, 2017), 2-12.

[104] CLO dealmakers that put flip clauses in the priorities of payments of new deals may do so to enter into flip clause swaps if the US bank regulators and the CFTC amend the Volcker Rule to allow CLO deals to hold fixed rate bonds. The Loan Syndications and Trading Association, "Volcker 2.0: Bond Buckets for CLOs Are In Play," May 31, 2018. "Importantly for the

remainder do not.[105] Moreover, no CLO deal with a flip clause can enter into a swap that complies with the swap margin rules because none of the CLO deals have the capital, legal, and operation capacities to exchange daily margin.[106]

Rating agencies also seem to be betting on a policy revival of flip clause swaps, as evidenced by the companies assigning top ratings to CLO notes irrespective of whether a deal has flip clauses in the priorities of payments.[107] The widespread rating practice well violate SEC rules, but the SEC generally overlooks rating violations. With respect to Moody's, the practice may also violate the company's settlement with the US Department of Justice and the attorneys general of 21 states and the District of Columbia of January 14, 2017.[108]

Also, a large number of other ABS practitioners and vendors — bankers, counsel, equity analysts, lobbyists, industry groups, (some) regulators, and underwriters — have balked at two-way margin posting since the Dodd-Frank Act was passed in July 2010. Most notably, the Structured Finance Industry Group (SFIG) has taken the lead by actively lobbying regulators to preserve flip clause swaps by exempting them from the swap margin rules.[109] The Trump administration, which is working to undo many Obama-era regulations in many industries, has rewarded the SFIG efforts. SFIG staff and members discussed flip clause swaps with CFTC, Treasury and Congressional staff on multiple occasions in 2017.[110]

The lobbying partly paid off when the CFTC provided a no-action position to ABS deals with legacy flip clause swaps in October 2017.[111] The no-action position primarily favors Navient, by far the largest single

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loan and CLO markets, the proposal puts into play the issue of whether banks should be able to own the debt securities of CLOs that own bonds."

105 In recent instances, S&P posted pre-sale reports of 11 new US CLOs between March 27, 2018 and April 25, 2018. Seven of the eleven CLOs had waterfall flip clauses (RR 4; Bain Capital Credit CLO 2018-1; Antares CLO 2018-1; Greywolf CLO VI; Ivy Hill Middle Market Credit Fund XIV; Goldentree Loan Management US CLO 3; and Northwoods Capital XI-B). The remaining four CLOs did not have waterfall flip clauses (Chenango Park CLO; Woodmont 2018-4 Trust; Benefit Street Partners CLO V-B; and Neuberger Berman Loan Advisers CLO 28).

106 For instance, a 2018 deal ZAIS CLO 8 Ltd contains two flip clauses in the priorities of payments but no capital, operational, or legal capabilities to post margin daily. See Christopher R. Davis and Jerry Jurcisin, "Presale: ZAIS CLO 8 Ltd," (New York: S&P Global Ratings, February 13, 2018), 14. In Table 14 "Interest Waterfall Payment Priority," Nos. 3 and 19 comprise the first flip clause. In table 15 "Principal Waterfall Payment Priority," Nos. 1A and 14N comprise the second flip clause.

107 Ibid., 1. Also, see William J. Harrington, Electronic Letter to S&P Global Analysts and the US Securities and Exchange Commission Offices of Credit Ratings, the Investor Advocate, and the Whistleblower Re: S&P Violations of SEC rules in Rating US CLOs with Waterfall Flip Clauses, US SLABS with Flip Clause Swaps and Navient, email, (May 10, 2018). Wikirating.org posted this email on May 22, 2018.

108 Harrington, Bill, "Moody's DOJ Settlement Won't Stop Fake Rating Analysis & Derivatives Denial," posted on the author's LinkedIn.com profile, January 13, 2017. Moody's is required to monitor the consistent application of rating methodologies until at least January 13, 2022.

109 The "Derivatives Advocacy" tab on the SFIG website largely pertains to flip clause swaps. See http://www.sfindustry.org/advocacy/categories/C52. See also William J. Harrington, *Electronic Letter to CFTC Secretary Christopher Kirkpatrick Re: CFTC Letter No. 17-52* (February 2, 2018), 1-80, 84, and 92-116. Wikirating.org posted this letter on February 3, 2018.

110 William J. Harrington, *Electronic Letter to CFTC Secretary Christopher Kirkpatrick Re: CFTC Letter No. 17-52* (February 2, 2018), 113. Wikirating.org posted this letter on February 3, 2018.

111 Ibid., in toto.

US user of flip clause swaps, by allowing ABS deals that were parties to a flip clause swap as of 1 March 2017 to avoid adding resources or otherwise recapitalizing the deals.

More generally, the US Treasury and CFTC are contesting the uniform use of margin posting swaps in all financial sectors. In October 2017, the US Treasury released a very lengthy blueprint for economic growth that called for Congress, the CFTC, the SEC, and the US banking regulators to exempt some types of financial entities from the stipulation that they may enter only into margin posting swaps. The Treasury blueprint does not specify which financial entities to exempt but does advocate that US regulators be allowed to align margin posting exemptions with those of foreign regimes. The blueprint also advocates for a general reduction in ABS regulations.[112]

Similarly, CFTC Chair Giancarlo has repeatedly called for a "Swaps 2.0," i.e., a reversal of at least some Dodd-Frank provisions such as those relating to margin posting.[113] A common goal of the regulators and ABS practitioners may be to revive the pre-crisis template for US RMBS with flip clause swaps, despite the extremely poor sustainability scores for the deals (-9) and counterparties (-10).

Reviving pre-crisis RMBS deals that embed flip clause swaps might provide financing for US residential mortgages and draw market share from Freddie Mac and Fannie Mae, but won't reduce bailout risk in the US financial system.[114] In fact, the reverse — an increased risk of bailout — may result. RMBS deals with flip clause swaps almost destroyed the US financial system in 2008 in large part because the AAA-ratings masked how few resources the deals had, and how many taxpayer resources would be needed to avert catastrophe.

[112] US Department of the Treasury, A Financial System That Creates Economic Opportunities—Capital Markets, Report to President Donald J. Trump, Executive Order 13772 on Core Principles for Regulating the United States Financial System (October 2017) 210-214, https://www.treasury.gov/press-center/press-releases/Documents/A-Financial-System-Capital-Markets-FINAL-FINAL.pdf.

[113] J. Christopher Giancarlo and Bruce Tuckman, "Swaps Regulation Version 2.0: An Assessment of the Current Implementation of Reform and Proposals for Next Steps," (Washington DC: US Commodity and Futures Trading Commission, April 26, 2018), 71-87. The following is from page 80. "In addition to an MSE threshold, the Commission might provide relief to end users by reconsidering how it interprets the definition of a financial entity in the Commodity Exchange Act 2(h)(7)(C)(i). A narrower definition, consistent with other terms used in that section, could bring additional clarity and relief to a variety of end users, including treasury affiliates, certain types of special purpose vehicles, and even some energy firms."

[114] Gregory Mott, "Fannie-Freddie Rise After White House Proposes Privatization," *Bloomberg*, June 21, 2018.

CONCLUSION

This working paper argues that some financial products labelled “green” or “ESG” embed features that undermine financial sustainability and are thus at odds with the sustainability principles implied in green and ESG product ratings. This paper provides a critical correction to the green and ESG sector that has been sorely needed.

The financial sustainability scores that this working paper proposes aim to measure the impact of a financial product on what has not been measured to date, namely the marginal: improvement or distortion of price signals; reduction or buttressing of chronic economic imbalances; boosting or draining of public resources; and reduction or increase in the odds of self-induced catastrophe.

Again, the author welcomes all feedback and will incorporate it in updated versions of the working paper.[115]

[115] Please send comments to the author’s Croatan Institute email address, bill@croataninstitute.org.

APPENDICES

Appendix 1 reviews the deeper methodology behind these scores and includes a review of the products discussed in this paper with proposed scores.

Appendix 2 includes a working list of how to refine this system of scoring.

Appendix 3 is a glossary that defines terms, acronyms, and idiomatic expressions that this working paper uses.

Appendix 1: Methodology behind the proposed financial sustainability scores

This working paper introduces financial sustainability scores, which describe the discrete impacts that financial instruments and contracts have on the sustainability of a financial system. The scores provide investors, policymakers, and researchers with a system for comparing financing products along a newly mapped, critical dimension; namely, the extent to which a product either boosts or undermines a financial system. Score values range from (-10) to (+10), with the negative endpoint indicating an entirely destructive impact on a financial system and the positive endpoint indicating an entirely sustainable impact.

A big picture utility of a financial sustainability scale is to identify and limit the use of financial products that unequivocally harm financial sustainability, e.g., products that have prompted taxpayer bailouts, required taxpayer bailouts, or both prompted and required taxpayer bailouts. Such a scoring system is both long overdue (given the 10-year anniversary of the Lehman bankruptcy in October 2018) and very timely (given the US Administration policy to resuscitate crisis-causing ABS sectors such as RMBS by resuscitating crisis-causing contracts such as flip clause swaps.) ESG practitioners can use the scores to assess the robustness of financial instruments such as RMBS and other ABS that self-identify as "green."

A second, intertwined utility of a financial sustainability scale is to identify and encourage the use of financial products that sustain the financial system by: delivering accurate pricing for investment decisions; seeding economic activity that will be regenerative for decades; and limiting the need for government support. Sustainable finance will be less complex, less exciting, less remunerative, and less of a drag on entire social system.

The methodology is based on the proposition that complex finance is an extremely young industry that came into being 30 years ago as the US and EU deregulated finance. Since then, complex finance has proliferated without demonstrating intrinsic utility, defined as: delivering accurate pricing for investment decisions; aiding economic activity than can be sustained for decades; and strengthening the financial system itself. Instead, complex finance is associated with, and possibly a contributor to, thirty years of slowing economic growth; under-investment in many economic sectors; and a global financial catastrophe.

In sum, the complex finance industry is chiefly a legal, marketing, and regulatory discipline rather than a quantitatively-based one rooted in empiric inquiry. Financial sustainability scores ignore the industry marketing except where it exacerbates the harmful impact of a financial product, as inflated credit ratings do.

Credit ratings should, but do not, assess the impact of financial instruments on the robustness of a financial system. Similarly, credit ratings should, but do not, balance bailout assumptions in a closed system that strictly offsets rating credits for bailout recipients with rating debits for a bailout provider, i.e., the respective sovereign. Instead, rating agencies should not, but do, routinely inflate the ratings of financial instruments, contracts, and providers that may draw bailouts without either tracking bailout costs or commensurately deflating the ratings of a respective sovereign.

By themselves, inflated credit ratings, as well as other top-heavy scales such as green bond assessments and equity recommendations, undermine financial sustainability by intensifying the destructive impact of the financial instruments and contracts being measured. Accordingly, the financial sustainability scale proposed has a bias towards negative values and the entire scale is grounded at a sore of -2 rather than 0. The negative bias reflects both the recurring nature of financial crises and the high correlations between all types of financing products that result from too-big-to-fail regimes and the proliferation of derivative contracts. The negative bias also corrects the excessively positive bias that the top-heavy scales such as credit ratings, equity recommendations, and green bond assessments generally embed.

- Attributes of a financial product that positively impact a financial sustainability score:
    - Designed to perform as marketed without benefit of direct or indirect government support
    - Widely understood
    - Transparent and accepted likelihood of investor losses
    - All particulars in existence for more than 100 years
    - Simple construction
    - End users such as investors can easily verify construction and independently project performance
    - Time tested, i.e., performed as expected in the financial crisis without the benefit of direct or indirect support
    - If a bond, shorter final maturity
- Attributes of a financial product that negatively impact a financial sustainability score:
    - Designed to fail in the absence of direct or indirect government support
    - Incomprehensible to most end users, even to comparatively sophisticated ones such as institutional investors
    - Risk of investor losses masked by rating inflation, equity recommendations, deal complexity
    - Most particulars only in existence since 1989, when the EU and US started deregulating complex finance
    - Complicated construction
    - End users cannot verify deal construction or verify project performance
    - Track record in causing systemic damage
    - If a bond, longer final maturity

Table: Summary of Representative Financial Sustainability Scores for Products Described in this Working Paper

N.B. Green shading indicates scores for ESG products (Providus CLO I @-8), green bonds (Green STORM 2016 @-7, Green STORM 2017 @-7, and Green STORM 2018 @-7) and flip clause swap counterparties to ESG products and green bonds (All @-10, e.g., Rabobank as backstop provider of flip clause swaps to the three Green STORM deals.)

Provisional Score	Product / Deal / Contract	Issuer / Sponsor / Originator	Description	Attributes of a Financial Product that Impacts Sustainability of a Financial System
-10 (lowest possible score)	***PROVIDER*** of any "flip clause swap" (an uncleared and non-margined swap with replacement provisions, rating agency conditions and a flip clause)	Respective counterparty to each deal with a flip clause. As example, Rabobank as backup provider of flip clause swaps to 3 Green STORM RMBS deals, as well as 15 other STORM deals Other examples of providers of flip clause swaps to one or more Navient-sponsored SLABS deals: • Citibank, N.A.; • JPMorgan Chase Bank NA; • Morgan Stanley Capital Services; • Royal Bank of Scotland; • Deutsche Bank New York; • Bank of America NA; • Royal Bank of Canada, Toronto; • Goldman Sachs Mitsui Marine Derivative Products LP; • Bank of New York; • Wells Fargo Bank; • CDC IXIS Capital Markets; • Natixis; • Swiss Re Financial Products; • AIG financial Products Corp; • Banque National de Paris; • Barclays Capital Markets; and • Credit Suisse First Boston International, Also, Lehman Brothers and its subsidiaries and affiliates that were counterparties to flip clause swaps, e.g., the swaps in dispute in Lehman Brothers Special Financing Inc. vs. Bank of America National Association, et al. (In re: Lehman Brothers Holding Inc), 2018	Flip clause swap	All flip clause swaps, including those described further below **NOTE:** A swap provider agrees to accept losses of up to 100% of a swap asset in the event of becoming insolvent, bankrupt, or similarly impaired. **ALSO:** Total losses to a swap provider may exceed 100% of a swap asset, if the provider pays legal fees because an ABS deal contests a flip clause. **LASTLY:** A swap provider accepts "double indemnity" when entering into a flip clause swap. To reduce the exposure to the standard "single indemnity" of a comparable swap without a flip clause, a swap provider must capitalize the full amount of the flip clause swap asset.

-10 (lowest possible score)	9 FFELP Student Loan Asset-Backed Security (ABS) Deals (Medium-to-Long Swap Final Maturity) 1. SLM 2003-7 (N/A) 2. SLM 2003-10 (2027) 3. SLM 2003-12 (2038) 4. SLM 2004-2 (2039) 5. SLM 2004-5 (2039) 6. SLM 2004-10 (2040) 7. SLM 2006-10 (2027) 8. SLM 2007-4 (2027) 9. SLC 2008-1 (2032)	Navient (formerly, either Sallie Mae [SLM] or The Student Loan Corporation [SLC])	FFELP ABS deal with a non-USD denominated tranche and entirely USD denominated student loans. Each deal has a longer-dated, cross-currency, balance-guaranteed flip clause swap.	Each flip clause swap is: - cross-currency; - balance guaranteed; and - medium to long-dated, with a final maturity in 2027 or later. **NOTE:** On its own, the cross-currency component increases the risks posed to the respective investors, swap provider, and financial systems by several quantums. **ALSO:** The balance-guaranteed component embeds a large degree of uncertainty to the swap valuation. **LASTLY:** A medium to long-dated final swap maturity creates a risk horizon that necessitates blind guesswork rather than analysis.
-10 (lowest possible score)	Representative EU CLO with waterfall flip clauses and buckets to purchase assets in 2nd currency Providus CLO I	Managed by Permira Debt Managers Group Holdings Ltd	Euro-denominated CLO with 98% of the tranches paying floating rates tied to EURIBOR. The deal has a waterfall flip clause to accommodate a 25% bucket for non-euro bonds subject to "perfect asset swaps," according to S&P. The "CLO will be restricted from investing in specified industries, such as tobacco and gambling," according to a Creditflux report of March 1, 2018.	Waterfall flip clauses allow deal to enter into flip clause swaps: - in 2nd currency (25% of deal); - that must be balance-guaranteed (i.e., perfect asset swaps); - potentially long-dated (10%); and - otherwise, predominately medium to long-dated (2031 final maturity). **NOTE:** On its own, the cross-currency component increases the risks posed to the respective investors, swap provider, and financial systems by several quantums. **ALSO**. The balance-guaranteed component embeds a large degree of uncertainty in the swap valuation. **LASTLY:** The potential for long-dated final swap maturity allows for a risk horizon that necessitated blind guesswork rather than analysis. **MITIGATION 1:** The currency bucket is capped at 25%.
-10 (lowest possible score)	Two representative repackaged security Repackaged CLO Series GG-A1, Ltd. Repackaged CLO Series CL 2014-2, Ltd.		USD AAA-rated CLO tranche, repackaged into a AAA-rated JPY-paying instrument with embedded flip clause swap	Each flip clause swap is: - cross-currency; - balance guaranteed; and - medium to long-dated. **NOTE:** On its own, the cross-currency component increases the risks posed to the respective investors, swap provider, and financial systems by several quantums. **ALSO:** The balance-guaranteed component embeds a large degree of uncertainty to the swap valuation. **LASTLY:** The repackaging embeds two layers of rating inflation

-9	2 FFELP Student Loan ABS Deals (Shorter Swap Final Maturity) 1. SLM 2003-2 (2023) 2. SLM 2003-5 (2024)	Navient (formerly, Sallie Mae)	FFELP ABS deal with a non-USD denominated tranche and entirely USD denominated student loans. Each deal has a shorter-dated, cross-currency, balance-guaranteed flip clause swap	Each flip clause swap is: - cross-currency; - balance guaranteed; and - short to medium-dated, with a final maturity in 2023 or 2024. **NOTE:** On its own, the cross-currency component increases the risks posed to the respective investors, swap provider, and financial systems by several quantums. **ALSO:** The balance-guaranteed component embeds a large degree of uncertainty to the swap valuation. **MITIGATION:** A short-to-medium-term final swap maturity collapses a risk horizon to one in which both educated guesswork and analysis can be applied.
-9	Pre-crisis US RMBS	US residential mortgage industry	Representative, pre-crisis US RMBS deal. The RMBS pay floating USD rates, whereas the securitized mortgages largely pay fixed USD rates and are pre-payable without penalty. The deal has a long-dated, balance-guaranteed flip clause swap.	Each flip clause swap is: - single-currency; - covers most or all of the senior tranches in a deal; - balance guaranteed; and - very long-dated, with a final maturity of 35 years or more after close. **NOTE:** The balance-guaranteed component in general, and borrower prepayment options in particular, embeds an extremely large degree of uncertainty in the swap valuation. **ALSO:** Each swap was entirely idiosyncratic and thus entirely reliant on the performance of the counterparty. The swaps could not be "replaced," according to a major, pre-crisis swap provider. **LASTLY:** The long-dated final swap maturity created a risk horizon that necessitated blind guesswork rather than analysis.
-8	TBD	TBD	TBD	TBD

-7	18 STORM Residential Mortgage-Backed Security or "RMBS" Deals (Swap Final Maturity in parenthesis) The first three deals — Green STORM 2016, 2017, and 2018 — are "green" RMBS deals. 1. Green STORM 2018 (2065) 2. Green STORM 2017 (2064) 3. Green STORM 2016 (2052) 4. FORDless STORM 2018 (2054) 5. STORM 2018-I (2065) 6. STORM 2017-II (2064) 7. STORM 2017-I (2064) 8. Purple STORM 2016 (2052) 9. STORM 2016-II (2063) 10. STORM 2016-I (2054) 11. STORM 2015-II (2054) 12. STORM 2015-I (2054) 13. STORM 2014-III (2053) 14. STORM 2014-II (2051) 15. STORM 2014-I (2049) 16. STORM 2013-IV (2053) 17. STORM 2013-III (2053) 18. STORM 2012-V (2054)	Obvion NV, a Dutch originator of residential mortgages and RMBS. (Obvion is wholly owned by Rabobank, a global financial cooperative.)	Euro-denominated, floating rate RMBS. The securitized Dutch residential mortgages are euro-denominated, largely fixed-rate, and subject to penalty for prepayment. Each deal has a balance-guaranteed flip clause. Three "green" deals — Green STORM 2016, 2017, and 2018 — securitize only "assets that comply with the 'green' eligibility criteria in Obvion's book," according to the respective S&P presale reports. "These criteria relate to the residential properties having certain energy performance certificates."	Each flip clause swap is: - single-currency; - covers 98% of the deal; - balance guaranteed; - very long-dated, with a final maturity in 204~~5~~9 or later; and - a vehicle for Obvion to provide 0.50% running to a deal. **NOTE:** The balance-guaranteed component covers 98% of the deal, which embeds an extremely large degree of uncertainty to the swap valuation. **ALSO:** Each swap is entirely idiosyncratic and thus entirely reliant on the performance of Rabobank as the backup swap provider. If Rabobank fails, all the STORM deals will incur losses. **LASTLY:** The long-dated final swap maturity creates a risk horizon that necessitates blind guesswork rather than analysis. **MITIGATION 1:** Rabobank is a stronger entity than many pre-crisis providers of swaps to US RMBS. **MITIGATION 2:** Prepayment penalties may limit prepayments relative to pre-crisis US RMBS. **MITIGATION 3:** Many STORM deals have paid in full well before the legal final maturity.
-6	TBD	TBD	TBD	TBD

-5	22 Private Student Loan ABS Deals (Medium-to-Long Swap Final Maturity - Estimated) 1. NAVI 2016-A (2045) 2. NAVI 2015-C (N/A) 3. NAVI 2015-B (2040) 4. NAVI 2015-A (2028) 5. NAVI 2014-A (2029) 6. SLM 2013-C (N/A) 7. SLM 2013-B (N/B) 8. SLM 2013-A (2027) 9. SLM 2012-E (2045) 10. SLM 2012-C (2046) 11. SLM 2012-B (N/A) 12. SLM 2012-A (2045) 13. SLM 2011-C (2044) 14. SLM 2010-C (2041) 15. SLM 2007-A (2041) 16. SLM 2006-C (2039) 17. SLM 2006-B (2039) 18. SLM 2006-A (2039) 19. SLM 2004-A (2033) 20. SLM 2003-C (2032) 21. SLM 2003-B (2033) 22. SLM 2003-A (2032)	Navient (Many were formerly Sallie Mae [SLM])	Private student loan ABS deal with all tranches paying floating rates tied to LIBOR. Many of the securitized student loans pay floating rates tied to the Prime rate. Each deal has a medium-to-long-dated, Prime-for-LIBOR, balance-guaranteed flip clause swap = 100% to 150% of the senior tranche (i.e., not the entire deal.)	Each flip clause swap is: - single-currency; - Prime-for-LIBOR; - balance guaranteed; and - medium to long-dated, with an estimated final maturity that ranges from 2027 to 2046. **NOTE:** The balance-guaranteed component embeds uncertainty in the swap valuation. **ALSO:** Each swap is idiosyncratic. Moreover, Prime-LIBOR swaps seldom trade. As a result, each deal is largely reliant on performance of the respective swap provider. **LASTLY:** The swap maturities, particularly those of 2030 to 2046, create a risk horizon that necessitates blind guesswork rather than analysis. **MITIGATION 1:** A Prime-LIBOR swap has a comparatively small risk exposure, roughly akin to a two-year fixed-for-floating swap. **MITIGATION 2:** The swaps comprise a comparatively smaller part of each deal (because the senior tranche of a private SLABS is smaller relative to a senior tranche of a FFELP SLABS.)
-4	5 Private Student Loan ABS Deals (Shorter Swap Final Maturity - Estimated) 1. NAVI 2014-CT (2024) 2. SLM 2014-A (2026) 3. SLM 2005-B (2023) 4. SLM 2005-A (2023) 5. SLM 2004-B (2024)		Private student loan ABS deal with all tranches paying floating rates tied to LIBOR. Many of the securitized student loans pay floating rates tied to the Prime rate. Each deal has a medium-dated, Prime-for-LIBOR, balance-guaranteed flip clause swap that = 100% to 150% of the senior tranche (i.e., not the entire deal.)	Each flip clause swap is: - single-currency; - Prime-for-LIBOR; - balance guaranteed; and - medium-dated, with an estimated final maturity no later than 2026. **NOTE:** The balance-guaranteed component embeds uncertainty in the swap valuation. **ALSO:** Each swap is idiosyncratic. Moreover, Prime-LIBOR swaps seldom trade. As a result, each deal is largely reliant on performance of the respective swap provider. **MITIGATION 1:** A Prime-LIBOR swap has a comparatively small risk exposure, roughly akin to a two-year fixed-for-floating swap. **MITIGATION 2:** The medium-dated final swap maturity collapses a risk horizon to one in which both educated guesswork and analysis can be applied. **MITIGATION 3:** The swaps comprise a comparatively smaller part of each deal (because the senior tranche of a private SLABS is smaller relative to a senior tranche of a FFELP SLABS.)

-4	8 US CLOs ***with*** waterfall flip clauses 1. ZAIS CLO 8 2. RR 4 3. Bain Capital Credit CLO 2018-1 4. Antares CLO 2018-1 5. Greywolf CLO VI 6. Ivy Hill Middle Market Credit Fund XIV 7. Goldentree Loan Management US CLO 3 8. Northwoods Capital XI-B		US CLOs, each with most-to-all tranches paying floating rates tied to LIBOR.	Each CLO waterfall has a flip clause but lacks the capital, legal, and operation capacities to exchange daily margin, i.e., cannot comply with the swap margin rules. Rating inflation and increased issuance raise the risk that US CLOs present to the financial system.
-3	4 US CLOs ***without*** waterfall flip clauses 1. Chenango Park CLO 2. Woodmont 2018-4 Trust 3. Benefit Street Partners CLO V-B 4. Neuberger Berman Loan Advisors CLO 2018		US CLOs, each with most-to-all tranches paying floating rates tied to LIBOR.	Rating inflation and increased issuance raise the risk that US CLOs present to the financial system.
-3	ABS Deal with 1M 3M Flip Clause Swap and 5-Year Final Maturity	TBD	TBD	Flip clause swap has five-year final maturity and is not balance guaranteed
-2 (grounding score for the scale)	***FINANCIAL SYSTEM*** as a whole	Society		A negative score (-2), rather than the midpoint (0), grounds the financial sustainability scale because: - financial crises recur periodically; - correlations are high between all types of financial products, owing to too-big-to-fail regimes and the proliferation of derivative contracts; and - top-heavy scales such as credit ratings and equity recommendations intensify the destructive impacts of damaging products. **NOTE:** Financial systems depend on a variety of forms of public subsidy to operate
-1	***PROVIDER*** of a fully-margined swap to an ABS deal		Fully margined swap	Margin posting: - greatly improves the impact on financial sustainability - greatly reduces the counterparty exposure that a deal presents to a swap provider
-1	**Theoretical ABS Deal** with fully margined swap with no flip clause	TBD	TBD	Margin posting greatly improves the impact on financial sustainability Single Currency Maturity < 10 years
0	**Theoretical ABS Deal** with option on difference between 1-month and 3-month index.	TBD	TBD	Single Currency Maturity < 10 years
0	***PROVIDER*** of a fully margined option to an ABS deal	TBD	TBD	The deal presents no counterparty exposure to the option provider Single Currency Maturity < 10 years

+1	**Theoretical ABS Deal** with potential depreciation addressed with additional assets (rather than swap or option)	TBD	TBD	No counterparty, therefore no counterparty exposure Exposure to rating inflation higher than for theoretical deal immediately below.
+2	**Theoretical ABS Deal** with potential depreciation addressed with cash (rather than additional assets, swap or option)	TBD	TBD	No counterparty, therefore no counterparty exposure Less exposure to rating inflation higher than for theoretical deal immediately above.
+3	**Theoretical ABS Deal With NO Potential Depreciation** from currencies, basis rates or interest rates	TBD	TBD	No counterparty, therefore no counterparty exposure No potential depreciation of assets viz-a-viz ABS owing to changes in currencies, interest rates, or reference credits.
+4	TBD	TBD	TBD	TBD
+5	TBD	TBD	TBD	TBD
+6	TBD	TBD	TBD	TBD
+7	TBD	TBD	TBD	TBD
+8	TBD	TBD	TBD	TBD
+9	TBD	TBD	TBD	TBD
+10 (highest possible financial sustainability score)	TBD	TBD	TBD	TBD

Appendix 2: Refinements to methodology

The proposed questions are intended to help refine the financial sustainability score that this working paper proposes.

- **A.** Does a non-linear scale such as a logarithmic scale better describe the degrees by which different financing tools impact financial sustainability?
- **B.** Does any financing instrument merit the highest (+10)?
    - **B1.** *Direct investment by a private person or enterprise?* Is private, direct investment among the most sustainable financing tools? The risk of 100% write-down of the ownership interest in an entity is severe but also well understood. By itself, a full write-down of the ownership interest in a given entity does not weaken the broader financial system.
    - **B2.** *Common equity?* Is issuing common equity among the most sustainable financing tools? Will a financial sustainability score differ by sector and size of the issuing entity? As example, will the score of common equity in a global bank differ from the score of the common equity in a smaller, non-financial entity?
    - **B3.** *A simple loan?* Does a loan from a purely private entity, i.e., one with no government backing, merit a higher score than an otherwise identical loan made by a government-backed entity that may be bailed out?
    - **B4.** *A bond issued by a private entity?* What constraints on maturity and other characteristics are consistent with the highest possible score (+10)? Might a wide range of bond issuers qualify for the highest possible bond score, provided that the relative differences between issuers are fully reflected in a range of public disclosures? As example, can both a bond issued by an extremely strong private entity and one issued by an extremely weak private entity qualify as (+10)?
    - **B5.** Does a bond that would otherwise merit (+10) but for an inflated credit rating deserve a lower score? Does the inflated capital rating distort pricing in a manner that can undermine a financial system?
- **C.** Does government financial support of a private enterprise weaken financial sustainability?
    - **C1.** *Direct government investment in a private enterprise?* Does direct government investment in a private enterprise undermine financial sustainability by increasing the likelihood of bailout?
    - **C2.** *Indirect government support to a private* enterprise? Does indirect support, such as a government guarantee of a private sector entity's operations or obligations, increase the likelihood of bailout? This was the case with the US government guarantees of GSE obligations and may be the case with financing mechanisms for FFELP student loans.
    - **C3.** *Does a financial sustainability score vary by whether the private entity is in a financial sector?* Will direct or indirect government financing for a private enterprise in a non-financial sector such as the auto sector have a higher score than otherwise similar financing investment in the financial sector?
- **D.** Do sovereign bonds sustain or undermine the financial system?

- **D1.** *A few sovereign issuers such as Germany and the US?* Do these issuers merit a high score of, say (+7)?
- **D2.** *All G7 countries?*[116] Do these issuers fall within a range, e.g. (Italy @0) to (Canada, Germany, and the US @+7), with the respective score for each sovereign a function of its debt profile?
- **D3.** *The G20 countries?*[117] Do these issuers merit almost the full range of scores from (Argentina @-8) to Canada, China, Germany, and the US @+7)?

E. What financing instruments warrant a score of (0), i.e., the financing neither boosts nor harms the financial system?

- **E1.** Fully paid, over-the-counter options? Are further constraints such as limits on size, tenor, reference index, and payout formula needed? Can a fully paid, over-the-counter option have score > (0)? If so, is there a maximum score, say (+4), considering the interconnectedness of providers and users of derivative contracts? Do scores differ for two otherwise identical options in which one option provider is a non-government insured entity and the second is a government-insured entity?

F. What financing instruments warrant a financial sustainability score of (-2), i.e., the score at which the scale is grounded? This score indicates that a financial product undermines the financial system and contributes to the next crisis.

- **F1.** *An uncleared swap with a non-financial entity and* one-way, daily posting of variation margin?
- **F2.** *An uncleared swap with a non-financial entity and* no posting of variation margin?

G. What financing instruments warrant a bad financial sustainability score (-5)?

- **G1.** A *FFELP ABS deal that is NOT party to an ABS flip clause swap?* The AAA and AA ratings of FFELP tranches mask significant under-capitalization that results from several intertwined conditions, all of which are exacerbated by the extremely long final maturities of the tranches, which can extend to 2083.[118] The underlying, intertwined conditions include: the low credit quality of FFELP servicers; the poor quality of servicing that servicers provide, which subjects them to litigation and enforcement actions; and the ability of the US government to refuse a higher percentage of FFELP reimbursement requests than currently.

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[116] The Group of Seven (G7) countries are Canada, France, Germany, Italy, Japan, the UK, and the US.

[117] The Group of Twenty (G20) countries are Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, the Republic of Korea, Russian Federation, Saudi Arabia, South Africa, Turkey, UK, US, EU, and Spain (as permanent guest member.)

[118] William J. Harrington, *Electronic Letter to CFTC Secretary Christopher Kirkpatrick Re: CFTC Letter No. 17-52* (February 2, 2018), 30. Wikirating.org posted this letter on February 3, 2018. "Navient facilitated the effectuation of amendments to the legal final maturities of at least 50 classes of notes in 31 FFELP ABS SPVs in a 14-month period between 7 December 2015 and 8 February 2017. In total, USD 10bn of notes were amended with new legal final maturities that ranged from 2045 to 2083." The 15 Navient announcements of the respective amendment effectuations are listed on pages 31-33.

Appendix 3: Glossary of financial terms, acronyms and idiomatic expressions

(Links to, and quotes from, the corresponding Wikipedia entry where one exists)

ABS — asset-backed security, "security whose income payments and hence value are derived from and collateralized (or "backed") by a specified pool of underlying assets"

Balance-guaranteed swap — swap in which one of the two parties is an ABS deal and for which payments can be determined only by reference to the evolution of the same ABS deal

Bond — "an instrument of indebtedness of the bond issuer to the holders… under which the issuer owes the holders a debt and (depending on the terms of the bond) is obliged to pay them interest (the coupon) or to repay the principal at a later date, termed the maturity date"

Brownfield — Brownfield land, "term used in urban planning to describe…land previously used for industrial or commercial purposes with known or suspected pollution including soil contamination due to hazardous waste"

CBI — Climate Bonds Initiative

CDO — collateralized debt obligation, type of ABS, "a CDO can be thought of as a promise to pay investors in a prescribed sequence, based on the cash flow the CDO collects from the pool of bonds or other assets it owns"

CFTC — Commodity Futures Trading Commission, "an independent agency of the US government…that regulates futures and option markets"

Chatham House Rule — "a system for holding debates and discussion panels on controversial issues…It is designed to increase opennesss of discussion…'When a meeting, or part thereof, is held under the Chatham House Rule, participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed.'"

CLO — collateralized loan obligation, a type of CDO "where payments from multiple middle sized and large business loans are pooled together and passed on to different classes of owners in various tranches"

Credit rating agency (or rating agency) — company that "assigns credit ratings, which rate a debtor's ability to pay back debt by making timely interest payments and the likelihood of default"

Credit ratings (or ratings) — "evaluation of the credit risk of a prospective debtor (an individual, a business, company or a government), predicting their ability to pay back the debt, and an implicit forecast of the likelihood of the debtor defaulting"

Code Red — "an emergency alert code used in hospitals"

Cross-currency (aka "currency") swap — derivative that "specifies an exchange of payments benchmarked against two interest rate indexes denominated in two different currencies"

Derivative — "contract that *derives* its value from the performance of an underlying entity"

ESG — environmental, social and corporate governance, "the three central factors in measuring the sustainability and ethical impact of an investment in a company or business"

Fitch Ratings — NRSRO credit rating agency

Flip clause — a provision in a swap with an ABS deal in which it pays a swap counterparty with high certainty when the counterparty is performing and very low certainty when the counterparty is insolvent, bankrupt, or similarly impaired

Flip clause swap — an uncleared and non-margined swap with replacement provisions, rating agency conditions and a flip clause

Futures contract — "standardized…legal agreement to buy or sell something at a predetermined price at a specified time in the future"

Green bond — a fixed-income financial instrument "linked to climate change solutions"

Greenwashing — "a form of spin in which green PR or green marketing is deceptively used to promote the perception that an organization's products, aims or policies are environmentally friendly"

Mark-to-market accounting — "refers to accounting for the 'fair value' of an asset or liability based on the current market price, or for similar assets and liabilities, or based on another objectively assessed 'fair' value"

Mark-to-market of a derivatives position — see eponymous section in Wikipedia entry for mark-to-market accounting

Moody's Investors Service — NRSRO credit rating agency

N.B. — an abbreviation for the Latin *note bene*, which is used to instruct the reader to "to note well the matter at hand, i.e., to take notice of or pay special attention to it."

NRSRO — nationally recognized statistical rating organization, "credit rating agency that issues credit ratings that the U.S. Securities and Exchange Commission permits other financial firms to use for certain regulatory purposes"

Navient — largest US student loan company

Obvion NV — Dutch company that originates and securitizes Dutch residential mortgages and is a wholly owned subsidiary of Rabobank

Off-the-record (journalism) — "the information is provided to inform a decision or provide a confidential explanation, not for publication"

Option — "a contract which gives the buyer (the owner or holder of the option) the right, but not the obligation, to buy or sell an underlying asset or instrument at a specified strike price on a specified date"

Penrose stairs — "two-dimensional depiction of a staircase in which the stairs make four 90-degree turns as they ascend or descend yet form a continuous loop, so that a person could climb them forever and never get any higher"

RMBS — residential mortgage-backed security, "package of financial agreements that typically represents cash yields that are paid to investors and that are supported by cash payments received from homeowners who pay interest and principal according to terms agreed to with their lenders"

Rabobank — Dutch financial cooperative with multinational activities that owns Obvion NV

Rube Goldberg machine — Rube Goldberg, "best known for a series of popular cartoons depicting complicated gadgets that perform simple tasks in indirect, convoluted ways, giving rise to the term Rube Goldberg machines for any similar gadget or process"

S&P Global — NRSRO credit rating agency

SEC — US Securities and Exchange Commission, "independent agency of the US federal government. The SEC holds primary responsibility for enforcing the federal securities laws, proposing securities rules, and regulating the securities industry, the nation's stock and options exchanges, and other activities and organizations"

Securitization — "financial practice of pooling various types of contractual debt such as residential mortgages, commercial mortgages, auto loans or credit card debt obligations (or other non-debt assets which generate receivables) and selling their related cash flows to third party investors as securities, which may be described as bonds, pass-through securities, or CDOs"

Shoe leather reporting — Enterprise reporting, "reporting that is not generated by news or a press release…Tied to "shoe-leather" reporting and "beat reporting," enterprise journalism gets the journalist…away from the traditional news makers. It also enlists some of the traditional traits of good investigative reporting, such as reading documents"

SLABS — student loan asset-backed security. See "Student loans" in Wikipedia entry for Asset-backed security

Swap — "derivative contract where two parties exchange financial instruments"

Too big to fail — "theory asserts that certain corporations, particularly financial institutions, are so large and so interconnected that their failure would be disastrous to the greater economic system, and that they therefore must be supported by government when they face potential failure"

Trust preferred security — "security possessing characteristics of both equity and debt"

Whitewash — "metaphorically, whitewashing refers to suppression or "glossing over" (possibly a close parallel construction) of potentially damaging or unwelcome information"

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