REGULATION THROUGH SUBSTITUTION AS POLICY TOOL: SWAP FUTURIZATION UNDER DODD-FRANK

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Recently, significant market and regulatory attention has focused on a new trend known as "futurization"—the recasting of economic arrangements previously transacted as swaps to trade as futures. This trend results from new regulations governing swap markets under the Dodd-Frank Act, which increase the cost of transacting in swaps. Given the magnitude of the business and economic interests at stake—the swap market is estimated at $633 trillion and the futures market is estimated to be $24 trillion—the futurization trend has significant implications for the success of the Dodd-Frank Act's swap market reforms and can provide important insights to the Commodity Futures Trading Commission ("CFTC") and other regulatory agencies as they seek to protect financial markets in the post-financial crisis environment.

This Article is the first to provide an academic treatment of this trend and its implications for regulatory policymaking. We develop a simple economic model to explain how regulators can "regulate through substitution" by encouraging market participants to subject themselves to one regulatory regime versus another through the imposition of

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differential regulatory costs. By applying this model to three critical areas of CFTC swap rulemaking—margin requirements, protection of customer collateral, and public dissemination of swap trading data—we predict the futurization effects of these regulations, which are in some cases contrary to what might be expected or desired. In doing so, we demonstrate how the common view of futurization as a trend affecting the swap markets in a uniform manner is overly simplistic and obscures the important lessons of futurization.

Armed with this predictive tool, we believe that the CFTC can apply the regulation through substitution analysis to better design regulations, to achieve its policy goals, and to assess the costs and benefits of proposed regulations. This same tool can be used by other regulators that similarly oversee multiple related regulatory regimes to better implement their policy concerns in similar contexts.

I. INTRODUCTION

"Now that the entire derivatives marketplace, both futures and swaps, have come under comprehensive oversight, I think it's the natural order of things for some realignment to take place." — CFTC Chairman Gary Gensler, CFTC Public Roundtable on Futurization of Swaps, January 31, 2013

Recently,[1] much attention has been paid to a trend known as "futurization"—the recasting of economic arrangements

[1] Of course, regulatory and academic interest in derivatives and their regulation is not new. *See, e.g.*, Frank Partnoy & David A. Skeel, Jr., *The Promise and Perils of Credit Derivatives*, 75 U. CIN. L. REV. 1019 (2007) (discussing the benefits of, and risks posed by, credit default swaps); Roberta Romano, *A Thumbnail Sketch of Derivative Securities and Their Regulation*, 55 MD. L. REV. 1 (1996) (providing a comprehensive overview of derivatives and their regulation in the United States); Lynn A. Stout, *Why the Law Hates Speculators: Regulation and Private Ordering in the Market for OTC Derivatives*, 48 DUKE L.J. 701, 767 (1999) (advocating for regulation of over-the-counter derivatives markets); Henry T.C. Hu, *Misunderstood Derivatives: The Causes of Informational Failure and the Promise of Regulatory Incrementalism*, 102 YALE L.J. 1457, 1460–61 (1993) (book review) (predicting insightfully that "[s]ome industry leaders and regulators worry that OTC derivatives could cause the great next banking crisis").

previously transacted as "swaps" to trade as "futures" as a result of the new regulation of the swap markets under the Dodd-Frank Act.[2] Proponents of futurization view it as a

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In particular, significant attention has recently been paid to the imposition of central clearing requirements, with a number of notable academics disagreeing with regulatory consensus that central clearing will decrease systemic risk. *See, e.g.*, Darrell Duffie & Haoxiang Zhu, *Does a Central Clearing Counterparty Reduce Counterparty Risk?*, 1 REV. ASSET PRICING STUD. 74, 75 (2011) ("For plausible cases, adding a new [central clearinghouse] dedicated to a class of derivatives such as credit default swaps (CDS) reduces netting efficiency, increases collateral demands, and leads to higher average exposure to counterparty default. We further show that counterparty credit risk in the OTC derivatives market is exacerbated by a multiplicity of CCPs."); Mark J. Roe, *The Dodd-Frank Act's Maginot Line: Clearinghouse Construction*, CALIF. L. REV. (forthcoming 2013) (manuscript at i), *available at* http://ssrn.com/abstract=2224305 (calling clearinghouse protection a "Maginot line," and stating that "clearinghouses are weaker bulwarks against financial contagion, financial panic, and systemic risk than is commonly thought" and that "[m]uch like an overconfidence inspired by powerful military fortresses that an invading enemy can side-step, the reigning overconfidence in clearinghouses lulls regulators to be satisfied that they have done much to arrest problems of contagion and systemic risk by building up clearinghouses, when they have not"); Yesha Yadav, *The Problematic Case of Clearinghouses in Complex Markets*, 101 GEO. L.J. 387, 444 (2013) ("The establishment of the clearinghouse is designed to fortify the market against the ill effects of financial innovation in the credit-derivative market. It should mutualize risk and make market players share losses. However, this Article argues that the design of this institution is problematic—and this is exacerbated by the fact that the credit-derivative products it trades are complex and tricky."); Craig Pirrong, The Economics of Clearing in Derivatives Markets: Netting, Asymmetric Information, and the Sharing of Default Risks Through a Central Counterparty (Jan. 8, 2009) (unpublished manuscript) (on file with the University of Houston Library), *available at* http://ssrn.com/abstract=1340660 ("Unfortunately, the received analysis of the effects of the creation of a CDS clearinghouse has been superficial and incomplete. As a result, this analysis provides very weak support for the view that a [central clearinghouse] will improve efficiency, or reduce the vulnerability of financial markets to systemic contagion.").

[2] *See, e.g.*, Silla Brush, *Swap-to-Future Conversion Has Regulators Studying Rules*, BLOOMBERG.COM (Jan. 28, 2013, 3:21 PM), http://www.bloomberg.com/news/2013-01-28/swap-to-future-conversion-has-regulators-studying-rules.html; Katy Burne, *Traders Seek*

desired transition from previously opaque swap markets to more transparent futures markets.[3] Opponents of futurization view it as regulatory arbitrage and thwarting congressional intent.[4] Still others view it as inevitable, with

Harmonization in New Futures, Swaps Rules, WALL ST. J. (Jan. 30, 2013, 10:27 PM), http://online.wsj.com/article/SB10001424127887323701904578274704132048858.html.

[3] *See, e.g.*, Cliff Lewis, Panelist, CFTC Public Roundtable on Futurization of Swaps (Jan. 31, 2013), at 59 [hereinafter CFTC Roundtable] (transcript *available at* http://www.cftc.gov/ucm/groups/public/@swaps/documents/dfsubmission/dfsubmission13_013113-trans.pdf) ("I think the way you've approached this is spot on. I think you ought to hold a parade and declare victory because I think actually moving much of this to the futures market is going to be a huge improvement in buy-side financial market management, not just from a risk perspective but from an efficiency perspective."); Bryan Durkin, Panelist, *id.* at 94–95 ("[T]he suggestion that moving any type of similar product or economically equivalently similar product or however it's been categorized today to a less transparent marketplace and trying to tie that to a futures market is just unacceptable to have to listen to that because the futures markets have many, many decades of development, and these decades of development were premised on transparency and openness. The distribution of our products and our markets are real-time. The information associated with that from a market data perspective, from a clearing perspective, is real-time.").

[4] *See, e.g.*, George Harrington, Panelist, *id.* at 45–46 ("In summary, we believe the push towards central clearing is very positive for the market, but forced futurization is a negative and can prove extremely costly to the American consumer."); Lee Olesky, Panelist, *id.* at 46–47 ("Fundamentally, we are concerned that as currently constructed and contemplated, the regulatory structure and rulemaking for swap futures creates an uneven playing field for market participants that wish to trade swaps and allows economically equivalent products to be traded subject to different system rules."); Jeffrey Maron, Panelist, *id.* at 51–52 ("We believe that such overnight futurization, unlike historical market-driven product evolution, has been significantly distorted by regulation. Accordingly, we believe that this market shifts [sic] should be carefully monitored by the Commission since it may harm market functioning if market participants are no longer able to find the choice, flexibility, and the liquidity that they require from the swaps markets."); Chris Ferreri, Panelist, *id.* at 75 ("Congressional intent for distinct swaps regulatory regime [sic] is thwarted when the name of a product is changed from 'swap' to 'future' for the sole purpose of moving it from one regulatory framework to another.").

no normative judgment necessary.[5] Given the enormous size of the swap and futures markets—estimates place the swap market globally at $633 trillion in notional size[6] and the futures market globally at $24 trillion in notional size[7]—and the central role of swap market reform in the Dodd-Frank post-financial crisis regulatory plan, the stakes in this debate are high.[8]

In this Article, we apply a new analytical treatment to the futurization trend with a view toward assisting the CFTC to better understand this phenomenon. We create a simple economic model to demonstrate that futurization can be explained through a concept we call "regulation through substitution"—the ability of a regulator to encourage market

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5 *See, e.g.*, Bart Chilton, Comm'r, CFTC, CFTC Roundtable, *supra* note 3, at 24 ("I just wanted to make a quick point. You know, we've been hearing a lot about this and not all bad that some of these swaps are becoming futures. I mean, you know, swaps were part of the problem, and so it doesn't bother me that we see some of this futurization, and the question is: does it become excessive?"); Will Rhode, Panelist, *id.* at 55 ("Swap futures acts [sic] as a wrapper to insulate swap users from some of the more punitive elements of Dodd-Frank reform. On the one hand, they may be viewed as a healthy innovative response by the financial services industry to regulatory change. Given that Congress looked to the futures market as a guide for swaps reform, it could be argued that swap futures are consistent with regulatory intent. In many ways, they appear to be a logical progression. On the other hand, swap futures can be viewed as regulatory avoidance. To borrow from Myron Scholes, one of the reasons we have financial innovation is to get around rules and regulations.")

6 Total notional amounts outstanding for all OTC derivatives contracts as of December 2012. BANK FOR INTERNATIONAL SETTLEMENTS, BIS QUARTERLY REVIEW: INTERNATIONAL BANKING AND FINANCIAL MARKET DEVELOPMENTS (STATISTICAL ANNEX) A141 (June 2013), *available at* http://www.bis.org/publ/qtrpdf/r_qa1306.pdf.

7 Total notional amounts outstanding for all exchange-traded futures contracts as of December 2012. *Id.* at A146.

8 For example, in April 2013, Bloomberg filed a federal lawsuit against the CFTC seeking an injunction against a rule that would set different mandatory clearinghouse margin minimums for futures and swaps. Complaint at 1–2, Bloomberg L.P. v. CFTC, 2013 WL 2458283 (D.D.C. June 7, 2013) (Civ. No. 13–523(BAH)), 2013 WL 1629236. While the lawsuit was subsequently dismissed on standing grounds, further litigation is sure to follow.

participants to subject themselves to one regulatory regime versus another through the imposition of differential regulatory costs. The substitution effect, whether for individual products or regulatory regimes, is well known and well understood. What differentiates substitution between the futures and swaps regulatory regimes from most substitution cases, however, is that both regimes are the responsibility of one regulator, the CFTC, which can significantly adjust the "price" of each regime through its regulations. Thus, a single regulator controls not only the *absolute* price of each regulatory regime but also the *relative* price of the two regimes it oversees.

Our simple model demonstrates that regulation through substitution is a more nuanced regulatory tool than might otherwise be thought. While most commentators have viewed futurization as a trend affecting the swap markets in a uniform manner, our model shows how different types of regulations are likely to futurize different segments of the swap markets. Specifically, since different regulations can impose different costs on different segments of the market, a particular regulation may encourage the futurization of a certain subset of swaps but not others. We use this insight to predict how the CFTC's new Dodd-Frank regulations will incentivize the futurization of certain swap products transacted by certain market participants and may even incentivize the reverse—"swapification"—by other market participants. We conclude that many of the CFTC's regulatory actions are likely to have consequences different from what the CFTC or market participants may expect.

While this Article applies our model to the futurization trend, the insights provided can be useful in other contexts. Specifically, a regulatory agency charged with oversight over two distinct but related regulatory regimes can predict certain consequences of regulation that would otherwise be considered "unintended." Armed with this predictive tool, regulatory agencies can design regulations to *intend* what otherwise would be unintended consequences of regulation. That is, a regulator can apply regulation through substitution to affirmatively achieve desired regulatory

outcomes, including the development of side-by-side markets with protections tailored for different groups of participants.[9]

In summary, we seek to introduce the concept of regulation through substitution, using a simple economic model to explain the recent trend of futurization with a view to informing the CFTC's ongoing rulemaking for the futures and swap regulatory regimes. Other regulators could also use regulation through substitution in other contexts. In Part II, we provide a primer on futures and swaps and their regulatory history. The unique relationship between futures and swaps, both economically and from a regulatory standpoint, is essential for understanding the dual regulatory structure for economically similar (and indeed sometimes identical) futures and swap products that gives rise to the opportunity for futurization. We then introduce the debate over futurization that has taken place over the past several months.

In Part III, we introduce a basic economic model of substitution of financial instruments.[10] We demonstrate how

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9 Such tailored regulation is particularly important given the highly complex and quickly evolving nature of the swap markets. As Roberta Romano observed with respect to regulation of financial markets more generally, "the nub of the regulatory problem derives from the fact that financial firms operate in a dynamic environment in which there are many unknowns and unknowables and state-of-the-art knowledge quickly obsolesces. In such a context, even the most informed regulatory response—which Congress's reaction in the recent crises was not—will be prone to error and is likely to produce backward-looking regulation that takes aim at yesterday's perceived problem, rather than tomorrow's, for regulators necessarily operate under considerable uncertainty and at a lag behind private actors." Roberta Romano, *Regulating in the Dark, in* REGULATORY BREAKDOWN: THE CRISIS OF CONFIDENCE IN U.S. REGULATION 86, 87 (Cary Coglianese ed., 2012).

10 In particular, our model is one of substitution under unlimited supply. Such a model is appropriate for financial contracts, like futures and swaps, that consist of sets of obligations created by mutual agreement rather than scarce goods with limited supply (in economics speak, a "non-rivalrous good"). The ability of market participants to enter into futures and swap contracts is, of course, constrained by various factors, such as the amount of capital available to collateralize the contracts, credit lines of financial institutions, and the aggregate amount of risk that market

both absolute and relative regulatory costs are captured by and are important to the model. Part IV applies this model to futurization and describes the ways in which the Dodd-Frank Act and the CFTC's rules are changing both the absolute cost of swap transactions and, importantly for the futurization debate, the relative cost of swap transactions versus futures transactions. This section also discusses our policy recommendation that the CFTC consider futurization effects when conducting cost-benefit analysis.

In Part V, we use the regulation by substitution model to predict the futurization effects on three critical areas of Dodd-Frank Act swap rulemaking currently underway—margin requirements, protection of customer collateral, and public dissemination of swap trading data. This analysis illuminates how futurization should not be viewed as a single regulation with a single corresponding increased regulatory cost, but rather as a series of individual regulations, each of which imposes differential (and sometimes conflicting) cost effects on various market segments. Thus, regulation through substitution in the futurization context can be a quite targeted regulatory tool to achieve desired outcomes, rather than a blunt instrument that affects all market participants equally. Part VI concludes.

II. FUTURES, SWAPS, AND "FUTURIZATION"

A. A Primer on Futures and Swaps

Before introducing the futurization debate, we begin with a brief primer on the economics of futures and swaps.[11] We

participants are willing to bear. For our purposes, however, the effects of these supply constraints in the current swap and futures markets are negligible.

11 Even more generally, futures and swaps are both types of derivatives. Derivatives are financial contracts that "derive" their value from the value of another asset, such as a stock option whose value is related to the price of the underlying stock. *See* Hu, *supra* note 1, at 1464–65. The uses of derivatives are varied, but, in general, because they derive their value from another asset that does not need to be purchased,

first provide descriptions, with examples, of the mechanics of futures and swap contracts. We then observe that futures and swaps are economically equivalent contracts—swaps can be thought of as a series of futures contracts—and, thus, cost differences between the two arise from regulation rather than the underlying economic reality.

1. Futures

Producers and consumers of agricultural commodities have traditionally faced uncertainty as to potential changes in the prices of these commodities resulting from the influence of weather, soil conditions, or other uncontrollable events affecting supply-and-demand dynamics. The futures markets developed as a mechanism for farmers, ranchers, millers, and others who produced agricultural products, or used them as inputs, to hedge the price of these commodities.[12] Rather than a wheat farmer (Mr. Filburn) worrying in advance about how a bountiful harvest could increase the wheat supply and thereby decrease the price of his product, or a miller (Mr. Wickard) worrying in advance about how a drought could decrease the supply of wheat and increase the cost of his inputs for flour, Mr. Filburn and Mr. Wickard could agree in advance that Mr. Filburn would sell Mr. Wickard 100 bushels of wheat for $1 per bushel at harvest time.

Each year, Mr. Filburn benefits if the spot price of wheat at harvest time—the price he could receive in the open market—is below $1. For example, if the spot price of wheat at harvest time is $0.98, Mr. Filburn would sell the wheat for $0.02 more per bushel than he could have on the open

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derivatives allow market participants to hedge their risk or take leveraged bets. Hu, *supra* note 1, at 1464–67; Yadav, *supra* note 1, at 401. For a detailed description of different types of derivatives contracts and their uses, see generally Romano, *supra* note 1.

12 *See* Randall S. Kroszner, *Can the Financial Markets Privately Regulate Risk?: The Development of Derivatives Clearinghouses and Recent Over-the-Counter Innovations*, 31 J. MONEY, CREDIT & BANKING 596, 598–604 (1999) (providing a history of futures and related organizational structure).

market, and Mr. Wickard would buy the wheat for $0.02 more per bushel than he could have on the open market. Alternatively, Mr. Wickard would benefit if the spot price of wheat at harvest time is above $1. For example, if the spot price of wheat at harvest time is $1.03, Mr. Filburn would sell the wheat for $0.03 less per bushel than he could have on the open market, and Mr. Wickard would buy the wheat for $0.03 less per bushel than he could have on the open market.

Despite the potential for benefit or loss to either Mr. Filburn or Mr. Wickard *ex post*, the arrangement would benefit both *ex ante* because of the certainty it provides: Mr. Filburn the wheat farmer can budget his expenses based on a more certain income, and Mr. Wickard the miller can plan his production based on a more certain price of inputs.

As this market developed, market participants realized that they could decrease their transaction costs by settling these contracts in cash, based on the prevailing spot market price, rather than physically delivering the agricultural commodity that was the subject of the contract. Mr. Filburn, instead of physically delivering 100 bushels of wheat to Mr. Wickard for $1 a bushel, could enter into a contract with Mr. Wickard under which Mr. Filburn would pay Mr. Wickard 100 times any increase in the spot price of wheat above $1, and Mr. Wickard would pay Mr. Filburn 100 times any decrease in the spot price of wheat below $1. Mr. Filburn could then sell his wheat in the open market at the spot price, and Mr. Wickard could buy his wheat in the open market at the spot price, with each being in economically the same position as if he had transacted 100 bushels of wheat for $1. For example, if the spot price of wheat is $1.02 at harvest time, Mr. Filburn would pay Mr. Wickard $0.02 per bushel. Mr. Filburn would sell his wheat for $1.02 per bushel on the open market which, when the $0.02 paid to Mr. Wickard is subtracted, would net him $1.00 per bushel—the same amount per bushel as if the contract was physically settled. Mr. Wickard, on the other hand, would purchase wheat on the open market at $1.02 per bushel, but his cost would be somewhat offset by the $0.02 per bushel he would

be paid by Mr. Filburn to settle the contract, thereby resulting in a net cost of $1.00 per bushel—also the same amount as if the contract was physically settled.

With this cash-settled innovation, the "forward" market for agricultural products deepened, as market participants were no longer constrained by the geographical and cost limitations imposed by a requirement to effect physical delivery at a particular place at a particular time. Much as the early pioneers of securities contracts congregated around a tree on Wall Street in New York to negotiate and enter into securities transactions, market makers in these standardized forward contracts—known as "futures"—congregated to buy and sell these contracts in an open market. Given the agricultural focus of this market, its capital quickly became Chicago—and thus was born the Chicago Mercantile Exchange ("CME"), the Chicago Board of Trade ("CBOT"), and others.[13]

2. Swaps

Over time, financial markets adopted more broadly the agricultural futures market's innovation of using contracts to shift price risk between counterparties. Instead of transferring the risk of price changes in physical commodities such as wheat, savvy market participants began to develop contracts that shifted the risk of interest rates, foreign exchange rates, stock price movements, and counterparty defaults to other market participants better able to bear them. These instruments became known as "swaps," as they generally consisted of an agreement between two parties to swap payment streams from a given asset. For example, in the context of a currency swap, the two counterparties to the swap might exchange payments on

13 *See* Kroszner, *supra* note 12, at 599 ("In the United States, the key force behind the development and enforcement of grading standards was the Chicago Board of Trade, which was founded in 1848, and went on to become one of the largest and most successful futures exchanges in the United States and the world.").

a U.S. dollar-denominated bond for payments on a Japanese yen-denominated bond.

Recall our miller, Mr. Wickard. Due to the increased cost certainty thanks to his use of futures contracts to lock in wheat prices, Mr. Wickard has succeeded beyond his expectations and wishes to build a new mill. Mr. Wickard visits his local banker (Mr. McCulloch) to inquire about a $10,000 loan to finance the building of the new mill. Mr. McCulloch is eager to lend to Mr. Wickard, but to minimize his exposure to interest rate risk, will only do so if Mr. Wickard pays interest at a floating rate that depends on prevailing interest rates at the time of each payment. Mr. Wickard, inspired by his recent experience in the futures market, asks Mr. McCulloch whether there are any financial contracts in existence that can shift the risk of interest rate risk away from Mr. Wickard, much as the futures contract shifted the wheat price risk away from Mr. Wickard in his dealings with Mr. Filburn.

Luckily, Mr. McCulloch has an answer. He gives Mr. Wickard the phone number of his friend Ms. Hamilton, who works at a large bank in the nearest city. Mr. Wickard calls Ms. Hamilton, who provides him with a proposal. Ms. Hamilton's bank offers Mr. Wickard a contract of the same duration as Mr. Wickard's loan from Mr. McCulloch, under which Mr. Wickard will pay Ms. Hamilton $500 each year. In exchange, Ms. Hamilton will pay Mr. Wickard the amount (based on floating interest rates) that Mr. Wickard owes on his loan. For example, if in a given year the prevailing interest rate is 6%, Mr. Wickard will owe Mr. McCulloch 6% of $10,000, or $600. If he has entered into the interest rate swap described above with Ms. Hamilton, however, Mr. Wickard would pay $500 to Ms. Hamilton and Ms. Hamilton would pay $600 to Mr. Wickard, which Mr. Wickard would turn around and pay to Mr. McCulloch to satisfy his interest payment obligation on the loan. If, the next year, the interest rate drops to 4%, Mr. Wickard would owe Mr. McCulloch only $400. Under the interest rate swap, however, Mr. Wickard would pay $500 to Ms. Hamilton and Ms. Hamilton would pay $400 to Mr. Wickard, which Mr.

Wickard would turn around and pay to Mr. McCulloch to satisfy his interest payment obligation on the loan. Thus, by swapping his stream of floating interest rate payment obligations for a stream of fixed payment obligations, Mr. Wickard has again removed a risk that would otherwise have made him unsure about future payment obligations.[14]

As in the futures example, despite the potential for benefit or loss to Mr. Wickard *ex post*, the swap arrangement would benefit him *ex ante* because of the certainty it provides: Mr. Wickard can plan his construction costs based on a certain price of financing. Ms. Hamilton is willing to enter into this contract because she will charge Mr. Wickard slightly more than she expects to pay on average, and she will mitigate her own interest rate risk by entering into other contracts with other parties.

3. Economic Comparison of Futures and Swaps

Mr. Filburn and Mr. Wickard's cash-settled futures contract on the price of wheat and Mr. Wickard and Ms. Hamilton's interest rate swap raise an important question: what is the difference between a futures contract and a swap? Both contracts were used to transfer price risk—the risk of changes to the price of wheat and the risk of changes to interest rates—away from one party to the other.

Consider Mr. Wickard's problem of hedging the floating interest rate obligation he has incurred under the loan from Mr. McCulloch. Rather than entering into the interest rate swap with Ms. Hamilton to convert his floating rate obligation under the loan into a fixed rate obligation, Mr. Wickard could have entered into a series of floating rate interest rate futures contracts (one for each interest payment date) that would pay him an amount based on the movement in the prevailing interest rate between the date on which he entered into the contract and the date on which the contract is settled. For example, if the floating rate payments under

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[14] *See* Hu, *supra* note 1, at 1467 ("In a swap, one party agrees to provide a sequence of cash flows and in return the other party provides a different sequence of cash flows.").

the loan fluctuated based on the interest rate for ten-year U.S. Treasury notes, Mr. Wickard could enter into a series of ten-year U.S. Treasury note futures contracts, such as those offered by the CME.[15]

The chart below compares the mechanics and results of the futures strategy and the interest rate swap strategy Mr. Wickard used in the example above. We describe these strategies in the same two scenarios faced by Mr. Wickard in the example above—where the interest rate on the loan is 6% and where the interest rate on the loan is 4%.

	Interest Rate Futures Strategy	**Interest Rate Swap Strategy**
Interest rate is 6%	**Futures Contract:** Mr. Wickard receives a payment on the futures contract representing the 1% increase in floating interest rates ($10,000 * 1% = $100 payment to Mr. Wickard) **Loan Interest Payment to Mr. McCulloch:** Mr. Wickard makes an interest rate payment to Mr. McCulloch representing the 6% prevailing interest rate ($10,000 * 6% = $600 payment by Mr. Wickard) **Mr. Wickard's Net Payment:** ($100 payment to Mr. Wickard) + ($600 payment from Mr. Wickard) = **$500 payment by Mr. Wickard**	**Interest Rate Swap Contract:** Mr. Wickard receives a payment representing the difference between the 6% floating interest rate owed to Mr. Wickard and the 5% fixed interest rate owed by Mr. Wickard ($10,000 * [6% - 5%] = $10,000 * 1% = $100 payment to Mr. Wickard) **Loan Interest Payment to Mr. McCulloch:** Mr. Wickard makes an interest rate payment to Mr. McCulloch representing the 6% prevailing interest rate ($10,000 * 6% = $600 payment by Mr. Wickard) **Mr. Wickard's Net**

15 *See 10-Year U.S. Treasury Note Futures*, CME GROUP, http://www.cmegroup.com/trading/interest-rates/us-treasury/10-year-us-treasury-note.html (last visited Dec. 2, 2013).

		Payment: ($100 payment to Mr. Wickard) + ($600 payment from Mr. Wickard) = **$500 payment by Mr. Wickard**
Interest rate is 4%	**Futures Contract:** Mr. Wickard makes a payment on the futures contract representing the 1% decrease in floating interest rates ($10,000 * 1% = $100 payment by Mr. Wickard) **Loan Interest Payment to Mr. McCulloch:** Mr. Wickard makes an interest rate payment to Mr. McCulloch representing the 4% prevailing interest rate ($10,000 * 4% = $400 payment by Mr. Wickard) **Mr. Wickard's Net Payment:** ($100 payment by Mr. Wickard) + ($400 payment by Mr. Wickard) = **$500 payment by Mr. Wickard**	**Interest Rate Swap Contract:** Mr. Wickard makes a payment representing the difference between the 4% floating interest rate owed to Mr. Wickard and the 5% fixed interest rate owed by Mr. Wickard ($10,000 * [5% - 4%] = $10,000 * 1% = $100 payment by Mr. Wickard) **Loan Interest Payment to Mr. McCulloch:** Mr. Wickard makes an interest rate payment to Mr. McCulloch representing the 4% prevailing interest rate ($10,000 * 4% = $400 payment by Mr. Wickard) **Mr. Wickard's Net Payment:** ($100 payment by Mr. Wickard) + ($400 payment by Mr. Wickard) = **$500 payment by Mr. Wickard**

As long as he reestablishes a futures position for each date on which he must make an interest payment on this loan, Mr. Wickard will be in an economically identical position whether he uses futures or swaps.

Just as Mr. Wickard could use swaps or futures to hedge his interest rate risk, Mr. Filburn and Mr. Wickard could enter into a swap—rather than the cash-settled futures

contract—to hedge their risks associated with the price of wheat. More specifically, Mr. Filburn and Mr. Wickard could have entered into a wheat swap contract under which Mr. Filburn would pay Mr. Wickard a specified amount if the price of wheat increased, while Mr. Wickard would pay Mr. Filburn a specified amount if the price of wheat decreased. Such a contract could be designed to have the same economic terms as the futures contracts that Mr. Filburn and Mr. Wickard entered into in the example in II.A.1. In short, to the extent available in the marketplace, futures and swaps can be used to address the same risks or otherwise to achieve the same economic outcomes.

This analysis demonstrates how futures contracts and swap contracts are fundamentally economically equivalent.[16] Both represent financial contracts under which the parties to the contract must make payments (or a series of payments) to each other based on a specific underlying asset. As there are no differences between the underlying economic structures, any cost differences must arise from differential regulatory costs or market differences (including differential transaction costs). However, as described in more detail below, the differences in market structures between the futures and swap markets is a function of the regulation of those markets. Thus, the cost difference for a futures contract and a swap contract that achieves the same economic outcome can be explained by differences in their regulation. The regulation of futures and swaps, and these differences, are described in the next section.

16 *See* Romano, *supra* note 1, at 10, 49 ("Futures contracts are standardized forward contracts" and "[b]ecause a swap contract consists of a series of cash payments made according to a prespecified formula, in which each period's floating-rate payment is set by the rate in effect in the prior period, it is equivalent to a portfolio of forward contracts."); *see also* Stout, *supra* note 1, at 766 (observing that "OTC derivatives are off-exchange futures and options" (emphasis omitted)).

B. Regulation of Futures and Swaps

Given their early agricultural focus, the futures markets in the United States were placed under the jurisdiction of the agriculture committees of the House of Representatives and the Senate. In 1936, the Commodity Exchange Act was enacted,[17] and the U.S. Department of Agriculture was given authority to oversee and enforce the Act. The Commodity Exchange Act required that futures contracts on "commodities"—a term that is defined very broadly—[18] be traded on "designated contract markets," cleared at clearinghouses, and subject to a host of regulatory requirements tailored to the standardized products traded and the commercial nature of the participants in the market. In 1974, Congress amended the Commodity Exchange Act to establish the CFTC as an independent agency to administer the Commodity Exchange Act.[19]

A few years before the Commodity Exchange Act was enacted, Congress separately enacted legislation to regulate what was then an entirely different, financially-focused

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17 Commodity Exchange Act, Pub. L. No. 74-675, 49 Stat. 1491 (1936). For additional discussion of the Commodity Exchange Act and the regulation of commodities, see 1 PHILIP MCBRIDE JOHNSON & THOMAS LEE HAZEN, DERIVATIVES REGULATION § 1.14 (2004) (updated annually). *See also* John D. Benson, *Ending the Turf Wars: Support for a CFTC/SEC Consolidation*, 36 VILL. L. REV. 1175, 1179–80 (1991) (describing changes in the CEA since 1974); Egon Guttman, *The Futures Trading Act of 1978: The Reaffirmation of CFTC-SEC Coordinated Jurisdiction Over Security/Commodities*, 28 AM. U. L. REV 1 (1978) (analyzing the Commodity Futures Trading Commission Act of 1974, which amended the CEA).

18 In addition to a list of agricultural products, the definition includes "all other goods and articles . . . and all services, rights, and interests . . . in which contracts for future delivery are presently or in the future dealt in." Commodity Exchange Act, 7 U.S.C. § 1a(9) (2012). The only items explicitly excluded, for historical reasons, are onions and motion picture box office receipts.

19 Commodity Futures Trading Commission Act of 1974, Pub. L. No. 93-463, 88 Stat. 1389 (1974). For a detailed description of the CFTC's historical regulatory regime of derivatives in the United States, see Romano, *supra* note 1, at 21–30.

market: the securities market. The Securities Act of 1933[20] was enacted to regulate offerings of securities and the Securities Exchange Act of 1934[21] established the Securities and Exchange Commission ("SEC") and imposed regulations on securities market participants.

In the late 1970s and early 1980s, the sharp line between the agriculturally-focused products regulated by the CFTC and the financially-focused products regulated by the SEC began to blur. Futures markets began to list futures contracts with non-agricultural underlying products, which were within the CFTC's jurisdiction due to the broad definition of "commodity" in the Commodity Exchange Act.[22] Under the inexorable force of innovation,[23] these products grew more complex and started to resemble modern financial products more than they resembled their agricultural futures ancestors. Examples of some of these new products include transactions to shift interest rate exposure specific to a particular loan (interest rate swaps), transactions to shift the risk of default on a particular bond or basket of bonds (credit default swaps),[24] and other similar transactions on

20 Securities Act of 1933, Pub. L. No. 73-22, 48 Stat. 74 (1933).

21 Securities Exchange Act of 1934, Pub. L. No. 73-291, 48 Stat. 881 (1934).

22 *See* Robert E. Whaley, *Derivatives*, *in* 1B HANDBOOK OF THE ECONOMICS OF FINANCE: FINANCIAL MARKETS AND ASSET PRICING 1129, 1135–36 (George M. Constantinides et al. eds., 2003); Jerry W. Markham, *Federal Regulation of Margin in the Commodity Futures Industry—History and Theory*, 64 TEMP. L. REV. 59, 87 (1991).

23 Part of this innovation was due to the invention of advanced asset pricing models, including the Black-Scholes option pricing model. *See* Fischer Black & Myron Scholes, *The Pricing of Options and Corporate Liabilities*, 81 J. POL. ECON. 637 (1973); *see also* Hu, *supra* note 1, at 1469–70 ("To begin systemically offering a broad range of derivatives, banks needed a conceptual breakthrough. In 1973, Fischer Black and Myron Scholes provided the breakthrough with their option pricing model. Grounded in certain assumptions about arbitrage, their option pricing model generated an exact theoretical price for the market value of options.").

24 *See* Yadav, *supra* note 1, at 401 (describing credit derivatives, including credit default swaps, as "a contract whose value is determined

financial instruments.[25] Rather than being standardized products, these "swap" transactions were customized to the specifications of the market participants who entered into them, and thus the transactions could provide a more tailored allocation of risks between the two counterparties.

As these markets evolved, the CFTC and the SEC, as well as the agriculture and banking committees in Congress that oversee the agencies, hotly debated which agency should regulate these new "swap"[26] products that were neither entirely futures nor entirely securities.[27] A temporary détente was reached in 1982, when Chairmen John Shad of the SEC and Philip Johnson of the CFTC negotiated the "Shad-Johnson Accord," which Solomonically split the baby between the two agencies along lines that had more to do

by changes in the credit risk of an underlying asset (such as a security) or entity (such as an issuer or borrower)").

25 For a description of the evolution of credit default swap markets, including their potential uses to shift credit risk, see Partnoy & Skeel, *supra* note 1. *See also* Yadav, *supra* note 1, at 406–16 (describing the development of clearinghouses in the context of credit derivatives).

26 "A swap is an agreement between two companies to exchange cash flows in the future." JOHN C. HULL, OPTIONS, FUTURES AND OTHER DERIVATIVES 149 (6th ed. 2006). For a thorough treatment of the economics of certain swap transactions and their uses, see *id.* and Frank Partnoy, *Financial Derivatives and the Costs of Regulatory Arbitrage*, 22 J. CORP. L. 211, 218–20 (1997).

27 For a more detailed introduction to the debate over agency regulation of swap products, see JERRY W. MARKHAM, A FINANCIAL HISTORY OF THE UNITED STATES, VOLUME III: FROM THE AGE OF DERIVATIVES INTO THE NEW MILLENNIUM (1970–2001) 96–97 (2002). *See also* U.S. GEN. ACCOUNTING OFFICE, CFTC AND SEC: ISSUES RELATED TO THE SHAD-JOHNSON JURISDICTIONAL ACCORD (2000), *available at* http://www.gao.gov/assets/230/228932.pdf [hereinafter GAO REPORT] (analyzing issues arising out of the Shad-Johnson Accord); Benson, *supra* note 17, at 1185–91 (providing a history of the jurisdictional disputes between the CFTC and the SEC); Markham, *supra* note 22, at 87–96 (discussing the evolution of the futures market and the surrounding legislative controversy); Whaley, *supra* note 22, at 1135–36 (describing innovations in the futures market from the late nineteenth century through the 1980s).

with historical jurisdiction than the economic realities of the swap products being regulated.[28]

In 2000, Congress passed the Commodity Futures Modernization Act ("CFMA").[29] The CFMA largely removed regulatory authority over swaps from both the CFTC and the SEC[30] and allowed these products to be transacted only by "eligible contract participants," a category intended to include only those market participants sophisticated enough

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28 *See* MARKHAM, *supra* note 27, at 87–88. The accord was codified in Section 2 of the Securities Act of 1933, 15 U.S.C. § 77b(a)(1) (2012) (defining "security"), Section 3 of the Securities Exchange Act of 1934, 15 U.S.C. § 78c(10)–(12) (2012) (defining "security," "equity security," and "exempted security") and Section 2 of the Commodity Exchange Act, 7 U.S.C. § 2(a)(1)(A) (2012) (expressly delimiting the jurisdiction of the CFTC). *See also* GAO REPORT, *supra* note 27, at 5–7 (discussing the historical background precipitating the Shad-Johnson Accord); Benson, *supra* note 17, at 1185–91 (providing a history of the jurisdictional disputes between the CFTC and the SEC); Markham, *supra* note 22, at 96 (noting that the agreement "did not establish federal regulatory authority over margins on commodity futures contracts. Nor did the agreement end either the jurisdictional battles between the SEC and the CFTC, or the efforts to obtain federal control over margins.").

29 Commodity Futures Modernization Act of 2000, Pub. L. No. 106-554, app. E, 114 Stat. 2763 (2000). While the CFMA largely deregulated swap markets (though limited them to eligible contract participants), commentators have noted that derivatives regulation has historically taken several forms, including private regulation and enforcement by courts. Frank Partnoy, *ISDA, NASD, CFMA and SDNY: The Four Horsemen of Derivatives Regulation?*, *in* BROOKINGS-WHARTON PAPERS ON FINANCIAL SERVICES 213 (Robert E. Litan & Richard Herring eds., 2002) (describing four types of derivatives regulation: (1) private ex ante legal rules developed by industry groups, such as the International Swaps and Derivatives Association; (2) private ex post legal rules applied by arbitrators in disputes, such as the National Association of Securities Dealers; (3) public ex ante legal rules and regulations, including the CFMA; and (4) public ex post legal rules, including rulings by courts adjudicating derivatives disputes).

30 Arthur W. Hahn, Lisa A. Dunsky & Nathaniel W. Lalone, *The Futurization Equation*, 8 CAP. MARKETS L.J. 166, 167 (2013) ("Prior to passage of the Dodd-Frank in July 2010, the CFTC lacked meaningful jurisdiction over the largely unregulated swaps market.").

to self-regulate.[31] By removing authority, Congress created two markets with respect to the transactions that would otherwise be under CFTC jurisdiction. One, the futures market, was a highly regulated, standardized market with regulations tailored towards all market participants, retail and institutional alike, including the agricultural market participants who created the market. The other, the swap market, was largely unregulated but restricted to eligible contract participants who were presumed to be sufficiently sophisticated such that they did not need the same types of protections as participants in the futures markets.[32]

C. The Financial Crisis and Dodd-Frank

The financial crisis of 2007–08 brought to light unanticipated risks that called into question the deregulatory approach to the swap markets.[33] While swap

31 Commodity Futures Modernization Act § 101(4). *See also* PATRICK D. DOLAN & C. VANLEER DAVIS III, SECURITIZATIONS: LEGAL AND REGULATORY ISSUES (2011); JOHNSON & HAZEN, *supra* note 17, at § 1.02[2], 1.02[8] (providing an overview of derivatives investments and jurisdiction as well as the development and regulation of new swap vehicles).

32 The futures and swap markets are, in fact, often distinguished based on the standardization or customization of the instruments. *See, e.g.*, Brush, *supra* note 2 ("Futures are agreements to buy or sell an asset or commodity at a specific price and time. They have standard sizes and maturities, are traded on exchanges and guaranteed at clearinghouses that take collateral from buyers and sellers. Swaps are traditionally traded directly between buyers and sellers, sometimes with customized maturities and sizes, and often aren't guaranteed at clearinghouses.").

33 According to the Financial Crisis Inquiry Commission Report, in September 2008, "'[t]he OTC derivatives markets came to a grinding halt, jeopardizing the viability of every participant . . . . Furthermore, when the OTC derivatives markets collapsed, participants reacted by liquidating their positions in other assets those swaps were designed to hedge.' This market was unregulated and largely opaque, with no public reporting requirements and little or no price discovery. With the Lehman bankruptcy, participants in the market became concerned about the exposures and creditworthiness of their counterparties and the value of their contracts. That uncertainty caused an abrupt retreat from the market." U.S. FINANCIAL CRISIS INQUIRY COMMISSION, THE FINANCIAL CRISIS INQUIRY REPORT: FINAL REPORT OF THE NATIONAL COMMISSION ON

markets did not cause the financial crisis, many have argued that the lack of regulation led to a build-up of systemic risk and fundamental misunderstandings of swap products that exacerbated the financial crisis and spread its effects throughout the economy. The result, not surprisingly, was a legislative "fix" in Title VII of the Dodd-Frank Act.[34] Title VII amended the Commodity Exchange Act and the federal securities laws to impose new regulations on the swap markets, which are modeled in large part on the oversight already afforded the futures markets.[35] The main pillars of Title VII are provisions that:

THE CAUSES OF THE FINANCIAL AND ECONOMIC CRISIS IN THE UNITED STATES 363–64 (2011), *available at* http://www.gpo.gov/fdsys/pkg/GPO-FCIC/pdf/GPO-FCIC.pdf; *see also* Benjamin M. Weadon, *International Regulatory Arbitrage Resulting from Dodd-Frank Derivatives Regulation,* 16 N.C. BANKING INST. 249, 256–57 (2012) (describing some of the risks associated with OTC derivatives during the global financial crisis of 2008).

34 Wall Street Transparency and Accountability Act of 2010, Pub. L. No. 111-203, 124 Stat. 1641 (2010). *See also* Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, 124 Stat. 1376 (2010) (to be codified in scattered sections of the U.S. Code); DAVIS POLK & WARDWELL, SUMMARY OF THE DODD-FRANK WALL STREET REFORM AND CONSUMER PROTECTION ACT, ENACTED INTO LAW ON JULY 21, 2010 (July 21, 2010), *available at* http://www.davispolk.com /sites/default/files/files/Publication/efb94428-9911-4472-b5dd-006e9c6185bb/Preview/PublicationAttachment/efd835f6-2014-4a48-832d-00aa2a4e3fdd/070910_Financial_Reform_Summary.pdf (summarizing the provisions of the Dodd-Frank Act). For an overview of the primary features of the Dodd-Frank Act's swap regulatory reforms, see Michael S. Barr, *The Financial Crisis and the Path of Reform*, 29 YALE J. ON REG. 91, 103–05 (2012).

35 *See* Gary Gensler, Chairman, CFTC, CFTC Roundtable, *supra* note 3, at 11–12 ("In the 1980s, the swaps markets emerged, and until now it lacked the benefit of . . . rules to promote transparency, lower risk through central clearing, and promote integrity by overseeing the intermediaries. We know what followed: the 2008 financial crisis, [in] which eight million American jobs were lost. In contrast, the futures markets supported by earlier reforms weathered the financial crisis. President Obama and Congress responded and crafted a swaps provision of Dodd-Frank by borrowing from what had worked best in the futures markets for decades: clearing, transparency, [and] oversight of intermediaries.").

- divide jurisdiction over swap products between the CFTC and SEC;[36]
- subject standardized swaps to centralized clearing in order to decrease systemic risk[37] and to electronic platform trading to increase market transparency;[38]

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36 *See* Commodity Exchange Act § 1a(47), 7 U.S.C. § 1a(47) (2012) (definition of "swap"); Securities Exchange Act § 3(a)(68), 15 U.S.C. § 78c(68) (2012) (definition of "security-based swap"); Further Definition of "Swap," "Security-Based Swap," and "Security-Based Swap Agreement"; Mixed Swaps; Security-Based Swap Agreement Recordkeeping, 77 Fed. Reg. 48,208 (Aug. 13, 2012) (to be codified at 17 C.F.R. pts. 230, 240, 241). For an explanation of the political considerations of the split in regulatory authority among U.S. financial regulators, see Roberta Romano, *Against Financial Regulation Harmonization: A Comment* 14 (Yale Law & Econ. Research Paper No. 144, 2010), *available at* http://ssrn.com/abstract=1697348 ("A concern animating [the portion of the Treasury Department's 2008 proposal which sought to consolidate regulatory authority] was that fragmentation of regulatory authority contributed to the depth and breadth of the crisis (because regulators might not have had command over all of the information involving an institution or market crash within their jurisdiction). The Treasury's proposal failed to garner political support, however. Dodd-Frank not only left the multiple regulator architecture virtually intact, but also moved in the opposite direction and expanded the number of regulatory entities.").

37 *See* Commodity Exchange Act § 2(h)(1) (clearing requirement) and Commodity Exchange Act § 2(h)(8) (trade execution requirement); Securities Exchange Act § 3C(a) (clearing requirement) and Securities Exchange Act § 3C(h) (trade execution requirement); Clearing Requirement Determination Under Section 2(h) of the CEA, 77 Fed. Reg. 74,284 (Dec. 13, 2012) (amending 17 C.F.R. pts. 39, 50); Swap Transaction Compliance and Implementation Schedule: Clearing Requirement Under Section 2(h) of the CEA, 77 Fed. Reg. 44,441 (Jul. 30, 2012) (amending 17 C.F.R. pt. 50); End-User Exception to the Clearing Requirement for Swaps, 77 Fed. Reg. 42,560 (Jul. 19, 2012) (amending 17 C.F.R. pt. 39); Process for Submissions for Review of Security-Based Swaps for Mandatory Clearing and Notice Filing Requirements for Clearing Agencies; Technical Amendments to Rule 19b-4 and Form 19b-4 Applicable to All Self-Regulatory Organizations, 77 Fed. Reg. 41,602 (Jul. 13, 2012) (amending 17 C.F.R. pts. 240, 249); Process for Review of Swaps for Mandatory Clearing, 76 Fed. Reg. 44,464 (2011) (amending 17 C.F.R. pts. 39, 140).

38 *See* Process for a Designated Contract Market or Swap Execution Facility to Make a Swap Available to Trade, 76 Fed. Reg. 77,728 (proposed

- mandate reporting of swap transaction information to regulators[39] and disseminating a subset of that information to the public in real time;[40]
- require the collection of collateral (known as "margin") to protect against counterparty risk, both in the form of an up-front buffer payment (known as "initial margin") and an ongoing exchange of payments based on daily mark-to-market moves (known as "variation margin");[41]
- require registration of key market participants known as "swap dealers" and "major swap participants,"[42] and subject these parties to capital and margin requirements;[43]

Dec. 14, 2011) (amending 17 C.F.R. pts. 37, 38); Registration and Regulation of Security-Based Swap Execution Facilities, 76 Fed. Reg. 10,948 (proposed Feb. 28, 2011) (amending 17 C.F.R. pts. 240, 242, 249); Core Principles and Other Requirements for Swap Execution Facilities, 76 Fed. Reg. 1214 (proposed Jan. 7, 2011) (amending 17 C.F.R. pt. 37).

39 *See* Swap Data Recordkeeping and Reporting Requirements: Pre-Enactment and Transition Swaps, 77 Fed. Reg. 35,200 (June 12, 2012) (amending 17 C.F.R. pt. 46); Swap Data Recordkeeping and Reporting Requirements, 77 Fed. Reg. 2136 (Jan. 13, 2012) (amending 17 C.F.R. pt. 45); Swap Data Repositories: Registration Standards, Duties and Core Principles, 76 Fed. Reg. 54,538 (Sept. 1, 2011) (amending 17 C.F.R. pt. 49).

40 *See* Real-Time Public Reporting of Swap Transaction Data, 77 Fed. Reg. 1182 (Jan. 9, 2012) (amending 17 C.F.R. pt. 43).

41 *See* Capital, Margin, and Segregation Requirements for Security-Based Swap Dealers and Major Security-Based Swap Participants and Capital Requirements for Broker-Dealers (Nov. 23, 2012) (amending 17 C.F.R. pt. 240); Margin and Capital Requirements for Covered Swap Entities, 76 Fed. Reg. 27,564 (proposed May 11, 2011) (amending 12 C.F.R. pts. 45, 237, 324, 624, 1221); Margin Requirements for Uncleared Swaps for Swap Dealers and Major Swap Participants, 76 Fed. Reg. 23,732 (proposed Apr. 28, 2011) (amending 17 C.F.R. pt. 23).

42 *See* Further Definition of "Swap Dealer," Security-Based Swap Dealer," "Major Swap Participants," "Major Security-Based Swap Participant" and "Eligible Contract Participant," 77 Fed. Reg. 30,596 (May 23, 2012) (amending 17 C.F.R. pts. 1, 240); Registration of Swap Dealers and Major Swap Participants, 77 Fed. Reg. 2613 (Jan. 19, 2012)

- impose "internal business conduct requirements" that require swap dealers and major swap participants to develop risk management programs around swaps and hire chief compliance officers;[44] and
- subject swap dealers and major swap participants to "external business conduct requirements" with respect to their counterparties, including significant disclosure requirements and requirements to verify counterparty eligibility.[45]

Title VII of the Dodd-Frank Act established the general framework for these requirements. In large part, Title VII maintains the historical jurisdictional divide between the CFTC and the SEC by providing the CFTC with jurisdiction over transactions that are "swaps" and the SEC with

(amending 17 C.F.R. pts. 1, 3, 23, 170); Registration of Security-Based Swap Dealers and Major Security-Based Swap Participants, 76 Fed. Reg. 65,784 (proposed Oct. 24, 2011).

43 *See* Capital, Margin, and Segregation Requirements for Security-Based Swap Dealers and Major Security-Based Swap Participants and Capital Requirements for Broker-Dealers, 77 Fed. Reg. 70,214 (proposed Nov. 23, 2012) (amending 17 C.F.R. pt. 240); Capital Requirements of Swap Dealers and Major Swap Participants, 76 Fed. Reg. 27,802 (proposed May 12, 2011) (amending 17 C.F.R. pts. 1, 23, 140); Margin and Capital Requirements for Covered Swap Entities, 76 Fed. Reg. 27,564 (proposed May 11, 2011) (amending 12 C.F.R. pts. 45, 237, 324, 624, 1221); Margin Requirements for Uncleared Swaps for Swap Dealers and Major Swap Participants, 76 Fed. Reg. 23,732 (proposed Apr. 28, 2011) (amending 17 C.F.R. pt. 23).

44 *See* Confirmation, Portfolio Reconciliation, Portfolio Compression, and Swap Trading Relationship Documentation Requirements for Swap Dealers and Major Swap Participants, 77 Fed. Reg. 55,904 (Sept. 11, 2012) (amending 17 C.F.R. pt. 23); Customer Clearing Documentation, Timing of Acceptance for Clearing, and Clearing Member Risk Management, 77 Fed. Reg. 21,278 (Apr. 9, 2012) (amending 17 C.F.R. pts. 1, 23, 37, 38, 39).

45 *See* Business Conduct Standards for Swap Dealers and Major Swap Participants with Counterparties, 77 Fed. Reg. 9734 (Feb. 17, 2012) (amending 17 C.F.R. pts. 4, 23); Business Conduct Standards for Security-Based Swap Dealers and Major Security-Based Swap Participants, 76 Fed. Reg. 42,396 (proposed Jul. 18, 2011) (amending 17 C.F.R. pt. 240).

jurisdiction over transactions that are "security-based swaps."[46]

Congress included forty-three separate rulemaking mandates in Title VII for the CFTC to implement the statutory requirements for swaps.[47] The choices made by the CFTC in adopting these regulations will determine the success of the new swap regulatory regime and the extent to which this regime may end the swap markets.

D. The Futurization Debate

In the ten-year period between the CFMA and the Dodd-Frank Act, market participants often structured transactions to avoid futures regulation because of the relatively high regulatory costs of futures compared to swaps. The Dodd-Frank Act, which increased regulatory costs of previously unregulated swaps, caused market participants, academics, and commentators to wonder whether market participants would do exactly the opposite—that is, structure transactions to be treated as futures rather than as swaps. As the CFTC's new swap regulations have been finalized and started to come into effect, market participants have indeed begun to migrate their positions from swaps to economically equivalent futures contracts.[48] This trend has been termed "futurization."

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46 Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, 124 Stat. 1376 § 722 (2010). This article focuses on the regulation of swaps by the CFTC, rather than on the SEC's regulations for security-based swaps, as the phenomenon of futurization involves transactions subject to CFTC regulation.

47 *See* DAVIS POLK & WARDWELL, DODD-FRANK PROGRESS REPORT 6 (2013), *available at* http://www.davispolk.com/files/Publication/900769d7-74f0-474c-9bce-0014949f0685/Presentation/PublicationAttachment/3983137e-639b-4bbc-a901-002b21e2e246/Apr2013_Dodd.Frank.Progress.Report.pdf.

48 "Small wonder . . . that swaps market participants have increasingly been contemplating 'futurisation', which generally refers to the process by which a standardized swap is recreated as a futures contract. The newly created futures contract can trade as a replacement for, or as an alternative to, the swap. The most likely candidates for futurization are those swaps that, due to their liquidity and relative

In July 2012, IntercontinentalExchange stated that it would futurize all energy contracts that had traded as swaps, and CME Group Inc. followed soon thereafter.[49] As of January 2013, 52% of the IntercontinentalExchange's volume of energy futures was in contracts that were swaps prior to October 15, 2012,[50] while 90% of CME's energy trades were done as futures, dramatically up from 10% before the new rules.[51]

In response to these developments, the CFTC held a one-day public roundtable on the futurization of swaps on January 31, 2013.[52] The purpose of the roundtable, as expressed by the CFTC, was to "provide industry participants and others an opportunity to present their views relating to the listing for trading and the clearing of various swap-like instruments, futures, and options contracts on . . . [regulated] designated contract markets or DCMs."[53] Over the course of four panels lasting approximately five hours,[54]

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standardization, are already voluntarily cleared or are likely to be subject to mandatory clearing. A futurized swap is a futures contract, and is regulated as such." Hahn, Dunsky & Lalone, *supra* note 30, at 166.

49 For a more detailed discussion of the futurization of swaps by IntercontinentalExchange and CME Group Inc., see *id.* at 168–69.

50 *See* Silla Brush, *U.S. Rules Are Scrutinized as Energy Futures Swapped for Swaps*, BLOOMBERG (Jan. 31, 2013, 7:11 PM), http://www.bloomberg.com/news/2013-01-31/u-s-rules-get-scrutiny-as-energy-futures-are-swapped-for-swaps.html.

51 *See* Brush, *supra* note 2.

52 For the full transcript of the roundtable, see CFTC Roundtable, *supra* note 3.

53 Richard Shilts, Acting Dir. of the Div. of Market Oversight, CFTC, *id.* at 8. Similarly, Ananda Radhakrishnan, Director of the Division of Clearing and Risk at the CFTC, stated towards the beginning of the roundtable: "[I]s it a bad thing for all clearable derivatives to become futures? And I'm not demonstrating a bias. I'm just asking: is that a bad thing? Because, you know, if that happens, there will be certainty of clearing because everything has to be cleared. Does the government have a role to play this? Should we care about whether all clearable derivatives become futures contracts? And if so, why? And if not, why not?" *Id.* at 28.

54 *See* Press Release, CFTC, CFTC Staff to Host Public Roundtable to Discuss the "Futurization of Swaps" (Jan. 18, 2013), http://www.cftc.gov/PressRoom/PressReleases/pr6500-13. Specifically,

debate raged between proponents of futurization,[55] its opponents,[56] and those who felt that futurization was inevitable, good or bad.[57] In general, proponents of futurization laud it as a movement of previously opaque products to a more transparent and protected market that withstood the financial crisis well. Opponents of futurization view it as an attempt at regulatory arbitrage.

In this Article, we take a different approach to the futurization debate. We make no normative judgment as to whether futurization in and of itself is good or bad.[58] Instead, we seek to explain futurization through a simple economic model of regulation through substitution. In doing so, we seek to provide the CFTC and other regulators with a tool to predict the futurization effects of their regulations and a framework by which to better understand the costs and benefits of futurization. Part III introduces our economic model of regulation through substitution.

III. A MODEL OF REGULATION THROUGH SUBSTITUTION: ABSOLUTE VS. RELATIVE COSTS OF REGULATION

As described above, the CFTC is now charged with implementing and operating different regulatory regimes for futures and swaps, which are economically similar or

panels were held on "[g]eneral industry views and concerns regarding the futurization of swaps in different asset classes," "[c]learing and different margin requirements for swaps and futures," "[t]ransaction-related matters including appropriate block rules for swaps and futures" and "[t]he effect of the conversion of swaps to futures on end-users."

55 *See* Cliff Lewis and Bryan Durkin, Panelists, CFTC Roundtable, *supra* note 3 at 59–64; 94–95.

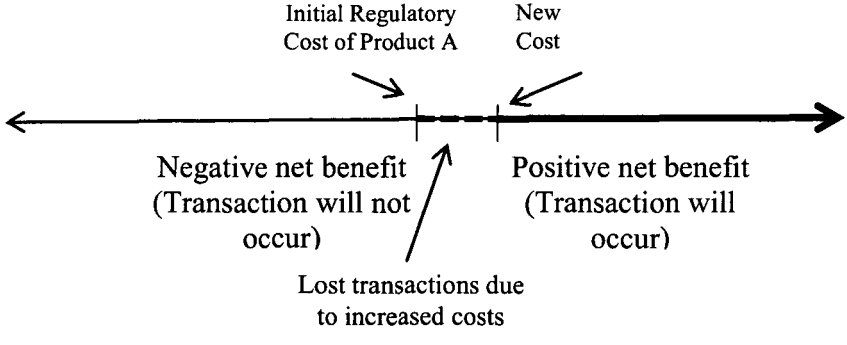
56 *See* George Harrington, Lee Olesky, Jeffrey Maron, and Chris Ferreri, Panelists, *id.* at 41–54; 73–79.

57 *See* Bart Chilton and Will Rhode, *id.* at 24–25; 54–58.

58 We are, of course, not the first to take this view. For example, Mark Carney, head of the Financial Stability Board and now incoming Governor of the Bank of England, noted that "'[f]uturization is not necessarily a bad thing' if it is consistent with the [Financial Stability Board's] changes . . . . 'That said, we are not trying to futurize everything. We leave it to the market to adjust.'" Brush, *supra* note 2.

identical financial products. Some of the usual reasons for differences in regulation of identical products—regulators with different missions; different scopes of authority; or different philosophies, approaches, or views—are not present here. Instead, differences in the regulation of the futures and swap markets are a result of historical and legislative chance. This Part seeks to provide a more formal, though necessarily highly stylized, framework by which to assess futurization.

We start our model with a single product: Product A. In our framework, the net benefit to a market participant of trading Product A depends on the economic benefits of the transaction and the costs of the product:



Net Benefit $_{\text{PRODUCT A}}$ = Economic Benefit $_{\text{PRODUCT A}}$ – Costs $_{\text{PRODUCT A}}$

The market participant will transact in Product A if the Net Benefit is positive—that is, if the Economic Benefit is greater than the Costs. If the regulatory cost of Product A increases, including through the introduction of new regulation, the Net Benefit of Product A will decrease. Depending on the magnitude of the Economic Benefit and the magnitude of the Cost increase, some transactions in Product A that would have occurred in the absence of the new regulation will not occur following the imposition of the regulation.[59]

[59] In this sense, a regulatory cost is just another transaction cost. *See* R.H. Coase, *The Nature of the Firm*, 4 ECONOMICA 386 (1937).

However, where there is an economically equivalent substitute for Product A (in our framework, Product B), an increase in the Cost of Product A with no change in the Cost of Product B will have two effects. First, some transactions in Product A will be "lost"; they will no longer be conducted in Product A, and will not be transferred to Product B, because transacting in Product A no longer has a positive Net Benefit and transacting in Product B does not have a positive Net Benefit. Second, some transactions in Product A will now be "transferred" to Product B. Specifically, these are transactions for which both Product A and Product B had a positive Net Benefit before the new regulation, and Product A's Net Benefit was greater than that of Product B before the new regulation, but for which Product A now has a smaller Net Benefit than Product B.[60]

[60] Most often, the tradeoff between two economic products, even in the regulatory arbitrage context, is shown using supply and demand charts. *See* Partnoy, *supra* note 26, at 236. Since futures and swaps are contracts, there is no inherent "supply." We instead model them using this framework. Partnoy is right that "the supply of particular financial instruments is likely to be extremely elastic because financial intermediaries confront nearly perfect substitutes for particular transactions . . . ." *Id.* at 237 n.138. Elsewhere, economic products are analyzed through a risk-return framework. Here, since these futures and swaps are economically identical, such a treatment is unnecessary.

FIGURE 1: BEFORE THE INCREASED REGULATORY COST OF PRODUCT A

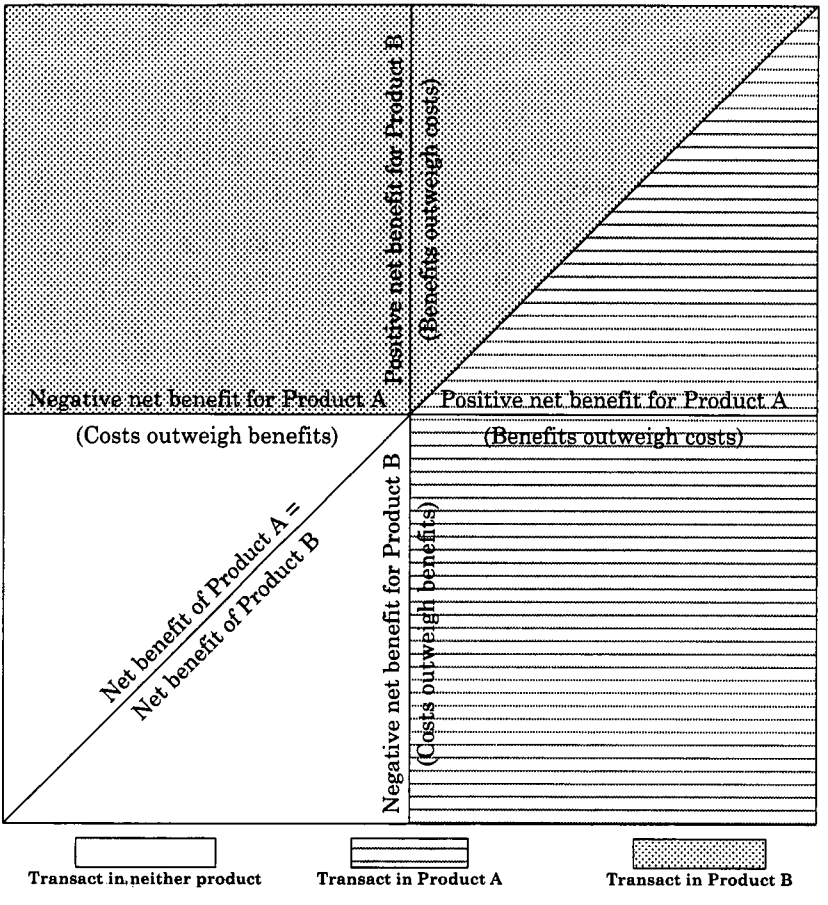
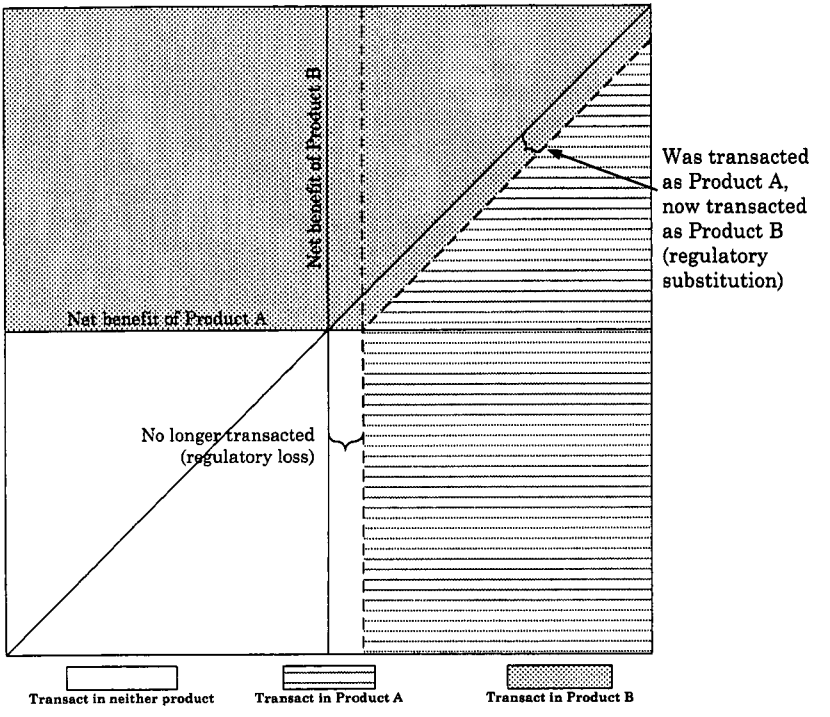


FIGURE 2: THE ABSOLUTE AND RELATIVE COST EFFECTS OF AN INCREASE IN THE "PRICE" OF PRODUCT A



Thus, unlike in a market where no substitutes for Product A exist, increasing the Cost of Product A through regulation will result *both* in transactions being lost and in market participants transacting in Product B instead.

This concept can be applied at a more general level, if we think in terms of regulatory regimes rather than in terms of Products A and B. Where the costs of transacting under a particular regulatory regime increase, and where a substitute regime is available, the number of transactions in the more costly regime will decrease and the number of transactions in the substitute regime will increase. Generally, though, the number of transactions in the substitute regime will not increase as much as the number of

transactions in the more costly regime decreases, resulting in some absolute loss.

Futurization presents the substitution effect in the context of an interesting and unusual regulatory framework. More precisely, the CFTC controls the "price" of both futures and swap transactions by virtue of its authority to implement the regulatory regime for both products. Thus, the CFTC controls not only the *absolute* price of each regulatory regime but also the *relative* price of the two regimes it oversees. This authority gives the CFTC the ability to use "regulation through substitution" as a policy tool. In the following Parts, we apply the simple model of futurization developed in this section to several aspects of futures and swap regulation. We then provide suggestions for how the CFTC should view its Dodd-Frank Act regulatory mandate in light of its ability to set both absolute and relative costs of regulation.

IV. APPLICATION OF THE MODEL TO DODD-FRANK'S SWAP REGULATIONS AND THE FUTURIZATION DEBATE

A key lesson of the recent financial crisis was that the swap market was oversaturated; because swap markets were relatively unregulated, market participants were choosing to use swaps without regard for their potential systemic implications. Regulation did not require market participants to internalize harmful externalities. While the CFMA generally restricted the availability of swap transactions to counterparties that were sophisticated "eligible contract participants" capable of understanding the risks of these transactions, the conventional wisdom (in hindsight) is that swap counterparties were not always able to understand the risks of these transactions. Thus, the lack of regulation of the swap market encouraged the use of swap instruments where they were inappropriate.[61] Furthermore, the

61 *See, e.g.*, Yadav, *supra* note 1, at 406 ("Unsurprisingly, the market has routinely struggled fully to understand and internalize the implications of credit-derivatives trading. This complexity extracts an

conventional wisdom (again, in hindsight) is that market participants entering into swaps did not account for the externalities posed by their swap transactions in the form of systemic risk and the "too big to fail" problem. In other words, many believe that the *absolute* cost of entering into swap transactions was too low, either in reality or as perceived by counterparties, resulting in too many swap transactions.[62] As predicted by our model, however, raising the absolute cost of swap transactions has a secondary effect—incentivizing the use of futures contracts by decreasing their *relative* cost.

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especially high cost when parties are unable to gauge where risk exposures come to rest."); *id.* at 413 ("Furthermore, scholars have noted that, even for expert institutions, credit derivatives are notoriously difficult to value and to properly provision for through mechanisms such as collateral cushions. The May 2012 J.P. Morgan fiasco in the CDS market is case in point. J.P. Morgan, having enjoyed a strong reputation in risk management through the crisis, vastly underestimated the risks that its credit-derivative trades posed for the bank and took positions that exceeded limits established in its internal checks and controls."). There were certainly other problems in the derivatives markets. *See, e.g.*, Robert P. Bartlett III, *Inefficiencies in the Information Thicket: A Case Study of Derivative Disclosures During the Financial Crisis*, 36 J. CORP. L. 1, 1–2 (2010) ("It is now accepted wisdom that a principal contributing factor to the destabilization of the financial system in 2008 was the notable lack of transparency in what has colloquially been dubbed 'the shadow banking system' . . . . The opacity with which financial institutions accumulated significant exposures to credit derivatives has naturally led to a variety of U.S. and international reform proposals aimed at casting light on this important corner of the financial sector."); Hu, *supra* note 1, at 1492–95 (describing principal-agent concerns).

62 Some of these misperceptions are common in the derivatives markets. *See, e.g.*, Hu, *supra* note 1, at 1487–91 (describing financial heuristics and biases that cause "departures from the rational actor model," which include the "threshold effect"—the fact that individuals tend to ignore low probability catastrophic events such as defaults—the "availability effect"—the use of information about associated events to estimate the probability of something occurring—and the "expert effect"—an overemphasis on the importance of variables best understood by an individual).

A. Dodd-Frank as an Increase in the Absolute Cost of Swaps

Viewed through the lens of our model, Title VII seeks to increase the *absolute* cost of swaps to the counterparties in two ways. First, through regulatory requirements such as margin and clearing, Title VII requires market participants to internalize a portion of the absolute costs that swaps pose on external parties, thereby decreasing the Net Benefit of swap transactions and discouraging their use. Second, through disclosure and transparency requirements, Title VII seeks to make market participants aware of the true costs of a swap transaction to better align them with the actual costs to the counterparty.[63] Under the theory that market participants have historically underestimated the costs of swap transactions, this additional disclosure and transparency should have the same effect: discouraging use of swaps by increasing the real or perceived costs.

1. Internalizing Absolute Cost Externalities

A primary way in which Title VII increases the absolute cost of swap transactions is by requiring market participants to internalize externalities created by entering into swap transactions. The most important of these externalities is the creation of systemic risk in the form of counterparty credit risk resulting from bilateral transactions between unregulated market participants.[64] This credit risk—the

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[63] There are doubts as to whether information disclosure will help investors understand the risks of complex derivatives. *See, e.g.*, Bartlett III, *supra* note 61, at 57 (performing an event study related to collateralized debt obligation ("CDO") disclosure by monoline insurance companies and concluding that "the overall results from this study indicate that investors in monoline insurers showed little evidence of efficiently processing monoline derivatives disclosures during the Financial Crisis" and that "the traditional disclosure model aimed at simply disseminating information to the public domain is unlikely to have significant efficacy when it comes to disclosures pertaining to complex credit derivatives").

[64] *See, e.g.*, Hu, *supra* note 1, at 1468 ("When a bank loans money to a corporation, the 'credit risk' is the risk that the corporation will fail to

risk that a person has that its counterparty will not pay amounts owed—can have systemic-level impacts in times of market stress, as was clearly demonstrated by the default of Lehman Brothers on its bilateral obligations and the resulting significant market impacts.[65]

One of the primary examples of an actual increase in the absolute cost of swap transactions due to Dodd-Frank is the introduction of central clearing requirements. In an attempt to decrease the systemic risk posed by bilateral swap transactions, Title VII requires market participants to "clear" standardized swaps at a central clearinghouse.[66] In

perform its obligations . . . ."). In a "bilateral" swap transaction, two counterparties remain counterparties to a swap, without the involvement of a central counterparty or other intermediary to shield each counterparty from the risk that the other party will not perform its obligations under the swap. The failure of counterparties to a bilateral transaction to fully address counterparty credit risk—for example, through margin requirements—generates systemic risk for financial markets. This systemic risk has long been understood and appreciated. *See* Hu, *supra* note 1, at 1494 ("For both legal and policy reasons then, bank managers are, to some extent, the agents of society."); *id.* at 1502 (describing systemic risks raised by derivatives). Mark Roe describes how systemic risk propagates. *See* Roe, *supra* note 1, at 8 ("Classic systemic risk comes from contagion. A key institution fails and cannot pay its debts to other financial institutions, which in turn fail. The failures cascade through the interconnected financial sector.").

65 Clearinghouses were developed to mitigate this risk. *See* Yadav, *supra* note 1, at 410. Of course, many believe that clearinghouses do not sufficiently solve this problem. *See, e.g.*, Roe, *supra* note 1, at 46 ("First, the risk transfer principle neutralizes most of the extolled systemic benefits of clearinghouses, and this principle allows us to organize, deepen, and extend the understanding of clearinghouse' [sic] systemic limits. Eliminating risk between the two parties to a transaction can mistakenly be thought to eliminate the risk from the system, when that risk is only transferred to a third party.").

66 *See* Wall Street Transparency and Accountability Act of 2010, Pub. L. No. 111-203, 124 Stat. 1641 (2010). Since the financial crisis, the clearing of standardized swaps has been considered one of the main pillars of financial reform. In its White Paper on financial regulation that served as the blueprint for Dodd-Frank, the Department of the Treasury stated that "[t]o contain systemic risks, the Commodities Exchange Act ("CEA") and the securities laws should be amended to require clearing of all standardized OTC derivatives through regulated central counterparties

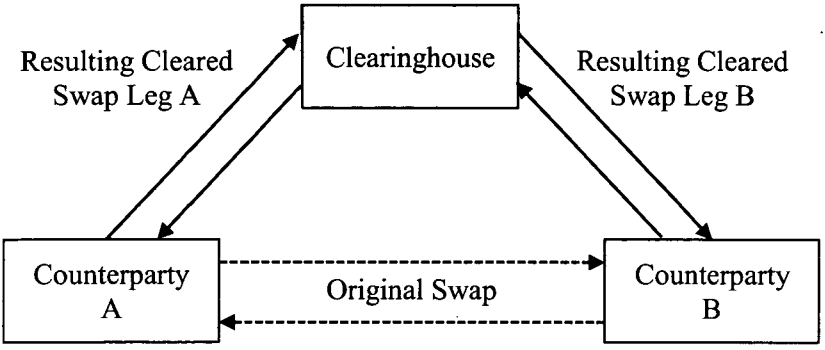
this context, "clearing" refers to the process of taking a bilateral swap between Party A and Party B, and separating the "market risk" of movements in the underlying prices (which is what the parties want to achieve through entering into the swap) from "credit risk" of the counterparty's default (which parties would usually prefer to avoid).[67] Clearing breaks the swap into two components, with each counterparty facing a central clearinghouse that intermediates the credit risk that each swap counterparty

(CCPs). To make these measures effective, regulators will need to require that CCPs impose robust margin requirements as well as other necessary risk controls and that customized OTC derivatives are not used solely as a means to avoid using a CCP. For example, if an OTC derivative is accepted for clearing by one or more fully regulated CCPs, it should create a presumption that it is a standardized contract and thus required to be cleared." DEP'T OF THE TREASURY, FINANCIAL REGULATORY FORM: A NEW FOUNDATION—REBUILDING FINANCIAL SUPERVISION AND REGULATION 47 (2009), *available at* http://www.treasury.gov/initiatives/Documents/FinalReport_web.pdf. Similarly, the G-20 nations agreed at the Pittsburgh Summit to work towards clearing by the end of 2012: "All standardized OTC derivative contracts should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counterparties by end-2012 at the latest. OTC derivative contracts should be reported to trade repositories. Non-centrally cleared contracts should be subject to higher capital requirements." G20, LEADERS' STATEMENT: THE PITTSBURGH SUMMIT ¶ 13 (2009), *available at* http://ec.europa.eu/commission_2010-2014/president/pdf/statement_20090826_en_2.pdf.

67 There has been significant academic argument that clearinghouses will not achieve the result of decreasing risk, and may even in some cases *increase* risk. *See, e.g.*, Yadav, *supra* note 1, at 393 (arguing, for example, that the "risk-sharing function [of a clearinghouse] can lead to misaligned incentives where individual participants trade knowing that, ultimately, the clearinghouse will bear the costs of their risk taking."); Pirrong, *supra* note 1, at 3 ("Unfortunately, the received analysis of the effects of the creation of a CDS clearinghouse has been superficial and incomplete. As a result, this analysis provides very weak support for the view that a [central clearinghouse] will improve efficiency, or reduce the vulnerability of financial markets to systemic contagion."); Roe, *supra* note 1, at 46 ("Clearinghouses are overrated as means to sop up systemic risk. They mostly transfer the risk. Because the transfer is hidden, it is easy to conclude that systemic risk has been alleviated, when in fact it has not.").

would have otherwise faced vis-à-vis its bilateral counterparty.[68]

FIGURE 3: CLEARING, SIMPLIFIED



The central clearinghouse is required to carry out several credit risk mitigating functions to address the counterparty credit risk to which it is exposed under the cleared swaps. These mitigating functions impose additional costs on the counterparties to the cleared swap.[69] First, counterparties to cleared swaps must post "initial margin" for the life of the trade, often in cash or other liquid financial instruments that could otherwise be invested.[70] If a cleared swap

68 *See also* Yadav, *supra* note 1, at 391–92 ("Legally, the clearinghouse breaks open the contract between a seller and a buyer of securities, interceding to become the buyer to each seller and the seller to each buyer so that each party only has to transact with the clearinghouse. By becoming the legal counterparty to each trade, the clearinghouse minimizes idiosyncratic risks attaching to specific firms and thus enables parties to transact with a (seemingly) safe and reliable partner—the clearinghouse.").

69 Pirrong's insightful study provides a mathematical model to describe some of these, and other, effects of clearing. *See generally* Pirrong, *supra* note 1. Yesha Yadav describes the law and economics of these risk mitigants. *See* Yadav, *supra* note 1, at 410.

70 Margin requirements for cleared swaps are imposed by the CFTC by regulation of swap clearinghouses, which must register with the CFTC as "derivatives clearing organizations" ("DCOs"). Initial margin

counterparty defaults, the clearinghouse can foreclose on the initial margin collateral posted by that party to pay amounts owed under the swap to the other, non-defaulting counterparty.[71] Second, counterparties to cleared swaps must post "variation margin" on a daily basis, which limits the potential losses upon the default of a counterparty to intraday movements but imposes the same opportunity cost (*i.e.*, the inability to use locked-up capital for other purposes) on the swap counterparties.[72] Third, members of the clearinghouse take on the risk of default of their customers and of other clearing members through a guaranty fund.[73] Finally, counterparties to cleared swaps face a direct cost in the form of clearinghouse clearing charges.[74]

The first three costs listed above are internalizations of the externalities caused by swap market participants. Specifically, systemic risk is an externality caused when individual market participants add credit risk to the market

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requirements for cleared swaps are set out in CFTC Regulation 39.13. 17 C.F.R. § 39.13 (2012).

71 *See* Protection of Cleared Swaps Customer Contracts and Collateral; Conforming Amendments to the Commodity Broker Bankruptcy Provisions, 77 Fed. Reg. 6336, 6337 (Feb. 7, 2012) (to be codified at 17 C.F.R. pt. 22, 190) (explaining that "[t]o secure the prompt payment of variation obligations, the DCO will require each Clearing Member to post collateral (often referred to as 'margin') for the transactions it clears (separately for customer positions and proprietary positions). If the Clearing Member does not promptly make a variation payment to the DCO—referred to as a default—the collateral may immediately be liquidated and applied to the obligation").

72 *See* 17 C.F.R. § 39.13 (setting initial and variation margin requirements for cleared swaps).

73 *See id.* § 39.11(b)(iii) (authorizing DCOs to establish and maintain guaranty fund deposits from their clearing members).

74 *See id.* § 39.21(c)(ii). In addition to these costs, there are indirect costs of clearing. For example, clearing requires standardization of products, which may lead to some "basis" risk in the form of the difference between the risk being hedged and the instrument used to hedge it. *See, e.g.*, Kroszner, *supra* note 12, at 608 ("Why would traders forgo the benefits conferred by the exchange and its clearinghouse? The benefits of the exchange-traded products are achieved at the cost of standardizing the contracts to make them fungible and liquid . . . .").

that, in the event of their failure, will propagate through the financial system. Posting initial and variation margin and contributing (directly or indirectly) to a guarantee fund forces market participants to internalize these costs by requiring them to pay for a buffer that will stop the spread of credit risk in the event of their default.[75] The fourth cost is simply an additional fee levied on the transaction. All of these costs raise the absolute cost of a cleared swap transaction compared to an economically identical uncleared swap, decreasing its Net Benefit in any particular case and discouraging the use of swaps.

2. Aligning Perceived Absolute Costs

The financial crisis highlighted circumstances in which market participants arguably did not understand the risks of the complex swap transactions they entered into. The most prominent examples include local governments, such as (most famously) Jefferson County, Alabama, that neared bankruptcy as a result of swap transactions that moved against them.[76] In terms of our framework, these counterparties misunderstood the absolute costs of entering into swap transactions and perceived the cost of swaps to be smaller than it truly was.

To address this problem, Title VII increases the perceived absolute cost of entering into swap transactions through

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75 Pirrong, *supra* note 1, at 8–13 (providing a useful mathematical model of default risk in derivatives markets that then extends to the usage of clearinghouses).

76 *See* Gretchen Morgenson, *The Swaps That Swallowed Your Town*, N.Y. TIMES, Mar. 7, 2010, at BU1 ("Imagine a homeowner who has a mortgage allowing her to refinance without a penalty if interest rates drop, as many do. Then she inexplicably agrees to give up that opportunity and not be compensated for doing so. Well, some towns did exactly that when they signed derivatives contracts that locked them in for 30 years . . . . The prime example, of course, of a swap-imperiled issuer is Jefferson County, Ala. Its swaps were supposed to lower the county's costs, but instead they wound up increasing its indebtedness. Groaning under a $3 billion debt load, the county is facing the possibility of bankruptcy.").

"external business conduct standards" that require swap dealers and major swap participants to provide potential swap counterparties with numerous disclosures. These include disclosures regarding the risks of swaps, conflicts of interest of the swap dealer, and payoffs under various loss scenarios.[77] These requirements include heightened disclosure and conduct obligations for swap dealers and major swap participants when transacting with so-called "special entities," which include federal, state, and local government counterparties.[78]

Requiring swap dealers and major swap participants to produce and provide the required disclosure may or may not increase the actual cost of swap transactions by increasing compliance costs. Still, the content of the disclosure may result in market participants reevaluating and increasing their (calculated) absolute cost of a swap transaction, thereby decreasing the transaction's Net Benefit as perceived by the counterparty and discouraging the use of swaps.

B. Futurization as a Change in the Relative Costs of Swaps and Futures

For all of its seeming concern with the *absolute* cost of entering into swap transactions, Title VII ignores the change in *relative* costs that results from the increase in the absolute cost of swaps. This is not entirely surprising. As argued above, the fact that one regulator (here, the CFTC) governs two separate and different regulatory regimes for products that are economically similar (and, in some cases, identical) is an accident of history and a distinctive rarity of the U.S. financial regulatory system.

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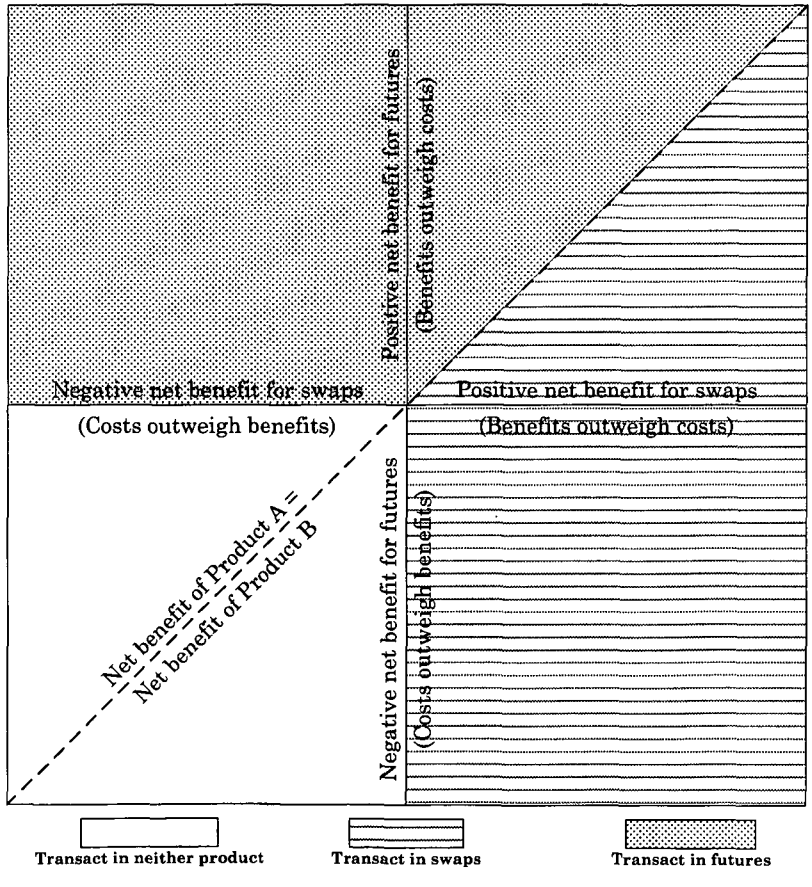
77 Business Conduct Standards for Swap Dealers and Major Swap Participants with Counterparties, 77 Fed. Reg. 9734 (Feb. 17, 2012) (amending 17 C.F.R. pts. 4, 23).

78 Specifically, CFTC regulation 23.401(c) defines the term "special entity," and CFTC regulations 23.440 and 23.450 include heightened obligations for swap dealers and major swap participants when dealing with special entities. 17 C.F.R. §§ 23.400; 23.401(c); 23.440; 23.450.

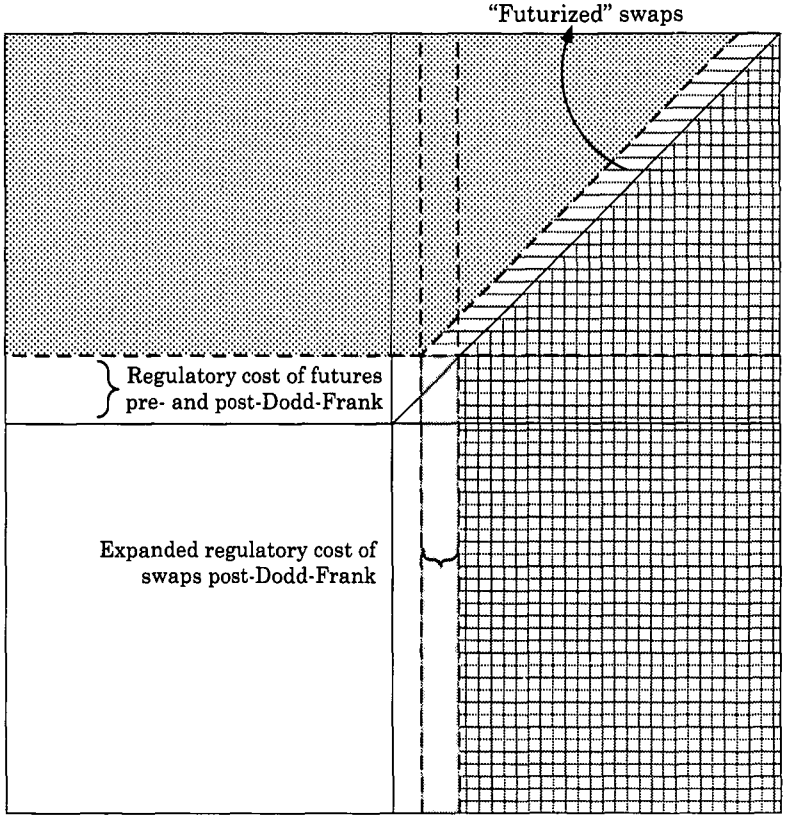
As depicted in Figure 4, absent significant regulatory costs, economic concerns would determine whether a specific transaction is transacted as a futures contract, as a swap, or not at all. Specifically, since regulatory cost is zero, where the Economic Benefit of transacting in a swap is greater than the Economic Benefit of transacting in a futures contract, the market participant will transact in the swap. The opposite is true, as well. Market participants will transact based on relative Economic Benefits and these choices will not be distorted by regulatory costs.

FIGURE 4: THE CHOICE BETWEEN FUTURES AND SWAPS IN THE ABSENCE OF REGULATION



During the decade between the enactment of the CFMA and Dodd-Frank, the regulatory cost of futures was significantly higher than the regulatory cost of swaps for those market participants eligible to enter into swaps. The result, as shown in Figure 5, was a move away from the economic equilibrium absent regulation and towards swaps—the "swapification" of futures contracts.

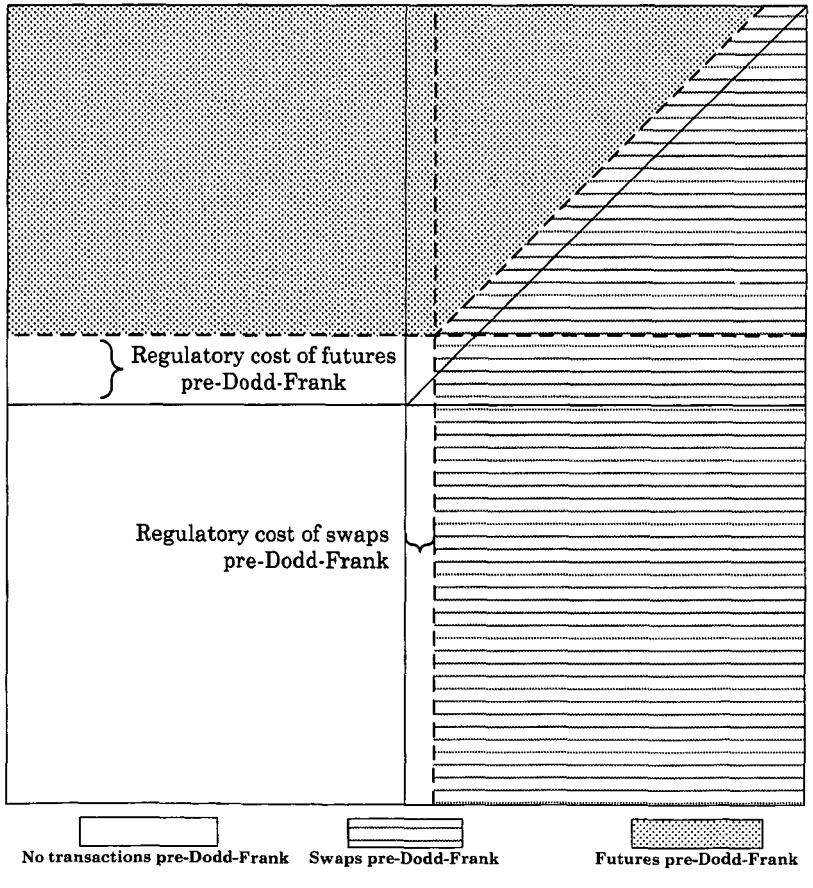
FIGURE 5: THE CHOICE BETWEEN FUTURES AND SWAPS AFTER THE CFMA BUT BEFORE DODD-FRANK



By increasing the *absolute* cost of entering into swap transactions, Title VII will decrease the number of swap transactions entered into, as illustrated by Figure 6. By

changing the *relative* cost of swaps versus futures, Title VII will increase the number of futures transactions entered into. Assuming that the increase in the absolute cost of swap transactions is not so large as to overshoot the initial regulatory equilibrium, all of the "futurized" swaps are transactions that would have been transacted as swaps pre-Dodd-Frank but for the increased relative cost of futures contracts. In other words, "futurization" is really the restoration of contracts that were originally "swapified."

FIGURE 6: THE CHOICE BETWEEN FUTURES AND SWAPS AFTER DODD-FRANK AND THE RESULTING FUTURIZATION



In the next Part, we use our model to describe and predict the futurization effects of three specific Title VII-related regulations. In doing so, our simple model demonstrates that "regulation through substitution" is a nuanced regulatory tool that can be used by the CFTC to incentivize the futurization of certain swap products transacted by certain market participants.

V. DECONSTRUCTING FUTURIZATION: THE DIFFERENTIAL RELATIVE COST EFFECTS OF THREE KEY REGULATIONS

To this point, we have described Dodd-Frank Act swap regulations as increasing the absolute cost of swap transactions and, thereby, their relative cost compared to futures transactions. In doing so, consistent with most debate on the futurization issue to this point, we have treated cost as a single variable that the CFTC controls directly. In reality, of course, the Title VII regulatory regime imposes a series of regulatory requirements on swaps, each of which has its own cost effects. A market participant's choice to use a swap or futures transaction—or neither—depends on the sum total of these cost effects.

The effects of different regulations are not uniform on market participants. One regulation may significantly increase the cost of swaps to swap dealers but not for end users of derivatives; another regulation may significantly increase the cost of swaps to those market participants who use credit derivatives but not to those who use interest rate derivatives. This is important to the normative implications for futurization, as it implies that the CFTC (and other regulators in similar circumstances) can employ different choices and closely tailored regulations to further their regulatory goals.

Because of the very different origins and regulatory histories of the futures and swap regulatory regimes, swaps are subject to requirements that can sometimes differ significantly from futures requirements. Some of these differences are due to differences in the statutory language of the Commodity Exchange Act that apply to swaps and

futures. Others are due to decisions made by the CFTC in adopting regulations governing the markets. This Part takes a closer look at three such regulatory differences and examines them in light of the model set out in Parts III and IV.

In particular, in this Part, we discuss three significant regulatory requirements—margin, collateral protection, and trade reporting—and describe their application to futures, cleared swaps, and uncleared swaps. We focus on these three requirements since they are among those with the most direct impact on the cost of a transaction. They are therefore among the most relevant inputs to our model and determinants of whether a particular transaction will be structured as a future contract or a swap. After introducing each regulatory issue, we apply the model and describe which swaps, if any, are likely to be "futurized" under proposed or recently implemented changes for swaps resulting from the Dodd-Frank Act.

A. Margin Requirements for Swaps and Futures

Margin refers to payments made by one counterparty to the other to serve as collateral for the first counterparty's obligations under a financial transaction. In this way, margin protects a counterparty to the transaction against counterparty credit risk—the risk that the transaction will move in its favor but the counterparty will not be able to pay as promised.

For futures and swaps, margin generally takes two forms: variation margin and initial margin. Variation margin, sometimes known as mark-to-market margin, is collateral exchanged to reflect the actual price movements of a transaction.[79] Variation margin is often calculated daily as the difference in the value of the transaction from the

[79] CFTC Regulation 1.3(fff) defines "variation margin" as "a payment made by a party to a futures, option, or swap to cover the current exposure arising from changes in the market value of the position since the trade was executed or the previous time the position was marked to market." 17 C.F.R. § 1.3(fff) (2013).

previous day's value. As such, variation margin can be thought of as protecting against the current exposure posed by one counterparty to another by virtue of accrued, but unrealized, gains or losses.[80]

On the other hand, initial margin, also known as a performance bond,[81] is meant to protect against potential future exposure that has not yet materialized but may before the next variation margin payment is made.[82] Initial margin is usually posted by one or both counterparties to a swap or

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80 The concept of protecting against "current exposure" through daily mark-to-market payments is often used in regulatory discussion of margin. *See, e.g.*, Capital, Margin, and Segregation Requirements for Security-Based Swap Dealers and Major Security-Based Swap Participants and Capital Requirements for Broker-Dealers, 77 Fed. Reg. 70,214, 70,241 n.257 (Nov. 23, 2012) (to be codified at 17 C.F.R. pt. 240) ("The current exposure is the amount that the counterparty would be obligated to pay the nonbank [security-based swap dealer] if all the OTC derivatives contracts with the counterparty were terminated (i.e., the net positive value of the OTC contracts to the nonbank [security-based swap dealer] and the net negative value of the OTC contracts to the counterparty). The amount payable on the OTC derivatives contracts (the positive value) is determined by marking-to-market the OTC derivatives contracts and netting contracts with a positive value against contracts with a negative value. The market value of an OTC derivatives contract also is referred to as the *replacement value* of the contract as that is the amount the nonbank [security-based swap dealer] would need to pay to enter into an identical contract with a different counterparty.") (emphasis added).

81 CFTC Regulation 1.3(ccc) defines "initial margin" as "money, securities, or property posted by a party to a futures, option, or swap as performance bond to cover potential future exposures arising from changes in the market value of the position." 17 C.F.R. § 1.3(ccc).

82 *See, e.g.*, Capital, Margin, and Segregation Requirements for Security-Based Swap Dealers and Major Security-Based Swap Participants and Capital Requirements for Broker-Dealers, 77 Fed. Reg. at 70,257 ("The potential future exposure is the amount that the current exposure may increase in favor of the dealer in the future. This form of credit risk arises from the potential that the counterparty may default before providing the dealer with additional collateral to cover the incremental increase in the current exposure or that the current exposure will increase after a default when the counterparty has ceased to provide additional collateral to cover such increases and before the dealer can liquidate the position.").

futures contract at the initiation of the transaction. Absent regulation, initial margin is usually a function of the perceived creditworthiness of the counterparty.

Margin requirements under the Commodity Exchange Act and CFTC regulations differ for futures, cleared swaps, and uncleared swaps. We provide a brief summary of these requirements below and discuss their implications for futurization.[83]

1. The Regulatory Regime

Futures. All futures contracts must be cleared through a CFTC-registered clearinghouse. To protect the clearinghouse from the failure of its members, the Commodity Exchange Act[84] and the CFTC's rules governing clearinghouses[85] require a clearinghouse to collect both initial and variation margin for futures contracts that it clears.[86] CFTC Regulation 39.13(g) requires clearinghouses to impose an initial margin requirement for futures contracts.[87] Under this requirement, clearinghouses must collect initial margin from each party to a futures contract sufficient to cover the party's potential future exposure under the contract over a one-day liquidation period, calculated based on a 99% confidence level.[88] The idea behind a liquidation period is that the initial margin should, at a high level of confidence, cover all potential moves of a

83 Our analysis focuses on margin requirements proposed by the CFTC and U.S. banking regulators. Other related requirements, such as capital charges under Basel III that differ for cleared and uncleared transactions, should also have futurization effects.

84 *See* Commodity Exchange Act § 5b, 7 U.S.C. § 7a-1 (2012).

85 *See* Derivatives Clearing Organization General Provisions and Core Principles, 76 Fed. Reg. 69,334 (Nov. 8, 2011) (to be codified at 17 C.F.R pts. 1, 21, 39, 140).

86 *See* 17 C.F.R. § 39.13.

87 *See id.* § 39.13(g).

88 *See id.*

futures contract over the amount of time that it will likely take the clearinghouse to be able to unwind the contract.[89]

CFTC Regulation 39.14(b) requires the clearinghouse to calculate and collect variation margin for futures contracts on a daily basis, and more frequently in times of "extreme market volatility."[90] Clearinghouse members that clear futures for customers are required to collect initial margin from customers that exceed the minimum levels set under CFTC Regulation 39.14, but they have discretion to determine how much initial margin above those levels to collect from each customer.[91]

Cleared Swaps. Clearinghouses are subject to the same general regulatory framework for cleared swap transactions as for futures contracts.[92] For cleared agricultural, metals, and energy swaps, a clearinghouse must collect initial margin sufficient to cover potential exposure over a one-day liquidation period, the same as the amount required for all types of futures contracts; for all other types of cleared swaps, the required amount must be sufficient to cover such exposure over a five-day liquidation period.[93] These "other" cleared swaps include the interest rate swaps and credit default swaps that constitute a substantial portion of the swaps market. The difference in liquidation period between futures and cleared swaps is controversial; indeed, Bloomberg L.P. sued the CFTC regarding this difference.[94]

Uncleared Swaps. The margin regime for uncleared swaps is distinct from that for futures and cleared swaps.

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89 *See* Derivatives Clearing Organization General Provisions and Core Principles, 76 Fed. Reg. at 69,366–68 (discussing methodologies for determining initial margin requirements based on liquidation times for different types of swaps).

90 17 C.F.R. § 39.14(b).

91 *See id.* (requiring, among other things, that derivatives clearing organizations "have the authority and operational capacity to effect a settlement . . . *when thresholds specified by the derivatives clearing organization are breached*") (emphasis added).

92 *See id.*

93 *Id.* § 39.13(g).

94 *See* Complaint at 5, Bloomberg L.P. v. CFTC, 2013 WL 2458283 (D.D.C. June 7, 2013) (Civ. No. 13–523(BAH)), 2013 WL 1629236.

The Commodity Exchange Act, as amended by the Dodd-Frank Act, requires U.S. banking regulators and the CFTC to adopt rules that require swap dealers to collect a minimum amount of initial and variation margin from their uncleared swap counterparties.[95]

Although no uncleared swap margin rules have been finalized, the CFTC and U.S. banking regulators have proposed rules. These rules would set initial margin requirements for uncleared swaps such that a swap dealer would need to collect initial margin sufficient to cover potential future exposure of a swap over a ten-day liquidation period calculated based on a 99% confidence interval.[96] Swap dealers would have the option of collecting initial margin in excess of that minimum requirement.[97]

As proposed, both the banking regulators' and the CFTC's margin requirements would require swap dealers and major

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95 *See* Commodity Exchange Act § 4s(e), 7 U.S.C. § 6s(e) (2012). Specifically, the U.S. banking regulators are required to write rules imposing uncleared swap margin requirements on swap dealers and major swap participants that they oversee, while the CFTC is required to write rules imposing uncleared swap margin requirements on all other swap dealers and major swap participants. Both the U.S. banking regulators and the CFTC have imposed, but not finalized, such margin requirements. *See* Margin and Capital Requirements for Covered Swap Entities, 76 Fed. Reg. 27,564 (proposed May 11, 2011) (to be codified at 12 C.F.R. pts. 45, 237, 324, 624, 1221); CFTC Margin Requirements for Uncleared Swaps for Swap Dealers and Major Swap Participants, 76 Fed. Reg. 23,732 (proposed Apr. 28, 2011) (to be codified at 17 C.F.R. pt. 23). Both proposals would require swap dealers and major swap participants to collect margin from, but not post margin to, swap counterparties. This is known as "unilateral margin."

96 *See* Margin and Capital Requirements for Covered Swap Entities, 76 Fed. Reg. 27,564 at 27,590; CFTC Margin Requirements for Uncleared Swaps for Swap Dealers and Major Swap Participants, 76 Fed. Reg. at 23,746.

97 *See id.* at 27,564 (explaining the purpose of proposed regulations to establish "*minimum margin and capital requirements* for registered swap dealers, major swap participants, security-based swap dealers, and major security-based swap participants") (emphasis added); CFTC Margin Requirements for Uncleared Swaps for Swap Dealers and Major Swap Participants, 76 Fed. Reg. at 23,733 (describing the proposed "*minimum* initial and variation margin requirements") (emphasis added).

swap participants to collect initial and variation margins from financial counterparties. These counterparties include other swap dealers and major swap participants, other banks and hedge funds, and other investment funds.[98] Initial margin collected from other swap dealers or major swap participants would need to be segregated and held with an independent third-party custodian.[99] Because all swap dealers and major swap participants would be required both to collect and to post initial and variation margin for inter-dealer transactions, a significant amount of liquid collateral would be locked up, thereby significantly raising the cost of swaps. Swap dealers and major swap participants would be required to collect initial and variation margin from, but not post margin to, financial counterparties that are not swap dealers or major swap participants.[100] A subset of these financial "end-user" counterparties, known as "low-risk financial end users," would be allowed to post less than the full amount calculated under the rules.[101] The proposed regulations do not require swap dealers and major swap

98 *See* Margin and Capital Requirements for Covered Swap Entities, 76 Fed. Reg. at 27,571 (defining "financial end user"); CFTC Margin Requirements for Uncleared Swaps for Swap Dealers and Major Swap Participants, 76 Fed. Reg. at 23,743–44 (defining "[f]inancial entity").

99 *See* Margin and Capital Requirements for Covered Swap Entities, 76 Fed. Reg. at 27,590–91; CFTC Margin Requirements for Uncleared Swaps for Swap Dealers and Major Swap Participants, 76 Fed. Reg. at 23,748.

100 *See* Margin and Capital Requirements for Covered Swap Entities, 76 Fed. Reg. at 27,588; CFTC Margin Requirements for Uncleared Swaps for Swap Dealers and Major Swap Participants, 76 Fed. Reg. at 23,744.

101 *See* Margin and Capital Requirements for Covered Swap Entities, 76 Fed. Reg. at 27,588. In order to qualify as a "low-risk financial end user," a financial counterparty must:

- have swaps or security-based swaps that fall below a specified "significant swaps exposure" threshold;
- predominantly use swaps to hedge or mitigate the risks of its business activities, including balance sheet, interest rate, or other risk arising from the business of the counterparty; and
- be subject to capital requirements established by a prudential regulator or state insurance regulator. *Id.* at 27,571.

participants to collect initial margin from certain commercial entities that engage in swaps to hedge commercial risk.[102]

The following table summarizes the differences among the initial margin requirements for futures, cleared swaps, and uncleared swaps:

FIGURE 7: COMPARISON OF LIQUIDATION TIME PERIODS FOR INITIAL MARGIN CALCULATION FOR FUTURES, CLEARED SWAPS, AND UNCLEARED SWAPS

	Futures	Cleared Swaps	Uncleared Swaps
Liquidation Time Period	1 day	1 day for agricultural, metals and energy swaps; 5 days for all other swaps	10 days (exceptions for commercial end users)
Parties Required to Post Margin	Both counterparties	Both counterparties	Only financial counterparties (including other swap dealers and major swap participants) to a swap dealer / major swap participant

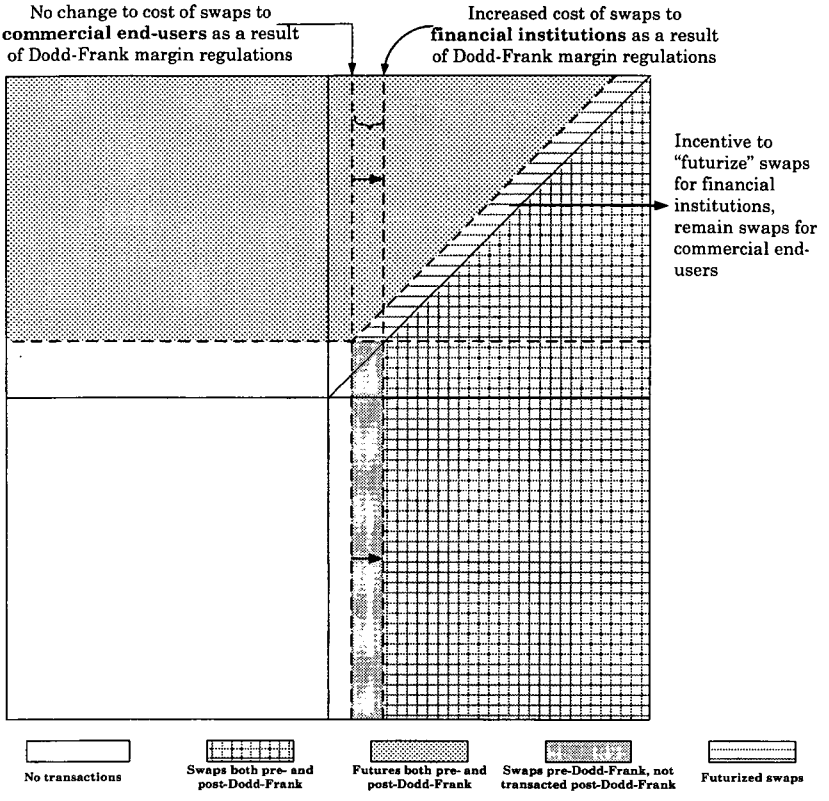
102 *See* CFTC Margin Requirements for Uncleared Swaps for Swap Dealers and Major Swap Participants, 76 Fed. Reg. at 23,745 (limiting margin requirements for a non-financial entity to those terms established in a required credit support arrangement. Swap dealers and major swap participants need these arrangements to engage in uncleared swaps, and these arrangements may account for any thresholds below which a party need not post initial or variation margin.); *see also* Margin and Capital Requirements for Covered Swap Entities, 76 Fed. Reg. at 27,569–70 (explaining that although Dodd-Frank's plain language requires agencies to establish margin requirements for all uncleared derivatives, because margin requirements must be formulated using a risk-based approach, swap dealers and major swap participants required to collect initial and variation margin may effectively exclude non-financial end users from the requirement to post initial and variation margin. This exclusion can be achieved by establishing thresholds below which margin need not be posted or collected. Such a limit would likely exempt many commercial end users from these proposed margin requirements).

2. Futurization Implications

The Dodd-Frank Act's initial margin requirement for swaps reflects a policy judgment that market participants were not properly protecting themselves or the economy from the swaps' inherent risks. These margin requirements increase the absolute cost of swaps for most market participants. Moreover, except for certain types of cleared swaps, the relative cost of margin for swaps will be higher than the cost of margin for futures, including where an economically identical futures contract is available.

As shown in the following graph, the overall result of the margin requirements is futurization of cleared swaps for which margin requirements are higher than for the equivalent futures contract. For some market participants, there will be no futurization effect. Commercial end users and, to a more limited extent, low-risk financial end users may be subject to uncleared swap margin requirements below pre-Dodd-Frank levels (or even exempt from such requirements altogether). Because costs for these market participants would either remain the same or decrease, they have no reason to follow the trend towards futurization spurred by the swap margin rules. From a policy perspective, this result is counterintuitive since, historically, swap markets were viewed as more appropriate for sophisticated market participants best able to understand the risks associated with swaps.

FIGURE 8: THE FUTURIZATION EFFECTS OF SWAP MARGIN RULES



B. Protection of Cleared Customer Collateral

A market participant must be a "member" to clear a futures or swap transaction at a clearinghouse. To be admitted as a clearinghouse member, a market participant must meet strict capitalization and operational requirements, agree to contribute to the guarantee fund, and, in certain circumstances, agree to take on client positions of a defaulting member.[103] As a result, only the

103 For example, see the requirements to be a clearing member of LCH.Clearnet, a leading swap clearinghouse. *See* LCH.CLEARNET GROUP, CLEARING RULE BOOK, at 27–43 (2013), *available at* http://www.lchclearnet.com/Images/RB%20VA%202013-09-27_tcm6-

largest and most sophisticated market participants are clearing members, while most other market participants access the clearinghouse through such clearing members. For a clearing member to clear swaps and futures for customers, it must register with the CFTC as a futures commission merchant ("FCM").[104]

When a customer accesses a clearinghouse through an FCM clearing member, the FCM clearing member collects initial and variation margin from the customer and passes it on to the clearinghouse. This margin is held at the clearinghouse in the customer account of the clearing member, which is separate from the proprietary account through which the clearing member clears its own trades.[105] The FCM may also require the customer to post excess margin above the amount required by the clearinghouse;[106] this protects the FCM against the customer's late payments or default.

44081.pdf (requiring members to have net capital requirements ranging up to €400 million, depending on a member's classification; imposing additional margin requirements in the event of credit ratings downgrades; and obliging members to establish connectivity with certain payment systems); *see also* CHICAGO MERCANTILE GROUP, CME RULEBOOK, at 4, 8, 28, *available at* http://www.cmegroup.com/rulebook/CME/I/9/9.pdf [hereinafter CME RULEBOOK] (requiring its financial instrument clearing members to maintain adjusted net capital of $500,000, to have certain established systems in place to connect with the clearinghouse, and to have written risk management policies and procedures in place to ensure a baseline of risk oversight).

104 *See* Commodity Exchange Act § 4d(f)(1), 7 U.S.C. § 6d(f)(1) (2012).

105 *See, e.g.*, CME RULEBOOK, *supra* note 103, at 23–24 (Rule 971); *see also* LCH.CLEARNET GROUP, CLEARING HOUSE PROCEDURES, Art. 4.2.2 (2012), *available at* http://www.lchclearnet.com/images/section4_tcm6-43748.pdf (describing segregation rules for clearing house members).

106 Derivatives Clearing Organization General Provisions and Core Principles, 76 Fed. Reg. 69, 334, 69,439 (Nov. 8, 2011) (to be codified at 17 C.F.R. § 39.13(g)(8)(E)(ii)) ("A derivatives clearing organization shall require its clearing members to collect customer initial margin, as defined in Sec. 1.3 of this chapter, from their customers, for non-hedge positions, at a level that is greater than 100 percent of the derivatives clearing organization's initial margin requirements with respect to each product and swap portfolio.").

The Commodity Exchange Act includes provisions designed to protect amounts held as collateral for initial margin for both futures and cleared swaps customers.[107] Among other requirements, firms that hold customer collateral for cleared swaps and futures contracts must register with the CFTC as FCMs and are subject to regulation as such.[108] However, as described below, based on a difference of one letter in one word of the Commodity Exchange Act (and, of course, public policy considerations), the current regimes for collateral posted to meet initial margin requirements for cleared swaps and futures differ.

1. The Regulatory Regime

Futures. The Commodity Exchange Act prohibits an FCM or clearinghouse that has received customer property, including as collateral to meet initial margin requirements, from treating that property as belonging to "the depositing [FCM] or any person other than the ***customers*** of such [FCM]."[109] Under this statutory provision and CFTC regulations, an FCM may hold all of its customers' collateral in a commingled customer account, but the customer account must be segregated from the FCM's proprietary funds. In the event that one of the FCM's customers defaults on a payment to the FCM, and the FCM cannot meet its obligation to guarantee that payment with its own funds (a "double default"), the clearinghouse can look to the funds of other customers of that FCM to satisfy its margin requirements.[110] Thus, under the futures rules, customers of

107 *See* Commodity Exchange Act § 4d(f)(2), 7 U.S.C. § 6d(f)(2) (2012) (explaining the treatment of cleared swap collateral by futures commission merchants); *id.* § 4s(l)(1), 7 U.S.C. § 6s(l)(1) (explaining the requirement to notify a counterparty to a non-cleared swap that segregation may be required for any funds posted as collateral).

108 *Id.* § 4d(a)(1), 7 U.S.C. § 6d(a)(1).

109 *Id.* § 4d(b), 7 U.S.C. § 6d(b) (emphasis added).

110 Protection of Cleared Swaps Customer Contracts and Collateral; Conforming Amendments to the Commodity Broker Bankruptcy Provisions, 77 Fed. Reg. 6336, 6340 (amending 17 C.F.R. pt. 190) (explaining that under futures rules, "following a double default, . . . the

an FCM are exposed to "fellow customer" risk—the risk that the default of another customer of the FCM, coupled with the default of the FCM, will cause losses to the non-defaulting customers of the FCM.

Cleared swaps. In amending the Commodity Exchange Act to incorporate protections for cleared swaps customers, the Dodd-Frank Act essentially copied the provisions relating to futures—with one small, but critical, change.[111] For cleared swaps, while an FCM may hold assets of all its cleared swap customers in one customer account, the Commodity Exchange Act prohibits an FCM and clearinghouse from treating those assets as belonging "to the depositing [FCM] or any person other than the swaps ***customer*** of the [FCM]."[112] The CFTC interpreted Congress' change to the singular "customer" in the swap context from the plural "customers" in the futures context to mean that a clearinghouse was restricted from looking to the collateral of non-defaulting customers of an FCM in the case of a double default.[113]

After considering four potential alternative methods to protect cleared swaps customer collateral,[114] the CFTC adopted regulations in January 2012 to implement a new customer collateral protection regime titled "Legal

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[futures model] would not prohibit a DCO from accessing the collateral of the non-defaulting Cleared Swaps Customers. However, unlike the Legal Segregation with Recourse Model, under the [futures model] the DCO would be permitted to access such collateral before applying its own capital or the guaranty fund contributions of non-defaulting FCM members.").

111 Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, 124 Stat. 1376 § 724, 7 U.S.C. § 6(f) (2010).

112 Commodity Exchange Act § 4d(f)(6), 7 U.S.C. § 6d(f)(6) (emphasis added).

113 Protection of Cleared Swaps Customers Before and After Commodity Broker Bankruptcies, 75 Fed. Reg. 75,162 (proposed Dec. 2, 2010) (amending 17 C.F.R. pt. 190).

114 The four potential alternatives were described as follows: (1) "Full Physical Segregation;" (2) "Legal Segregation With Commingling;" (3) "Moving Customers to the Back of the Waterfall;" and (4) "Baseline Model." *Id.* at 75,164.

Separation with Operational Commingling" ("LSOC"), striking a compromise between the need to minimize cost of account management and the need to protect against "fellow-customer risk."[115] Under the LSOC model, an FCM may hold the collateral of all of its customers in a single cleared swaps customer account, but for legal purposes, must treat the collateral separately on a customer-by-customer basis.[116] In the case of a double default, the clearinghouse is only permitted to use an amount of funds from the FCM's customer account equal to the amount attributable to the defaulting customer, thereby protecting other customers from fellow-customer risk. However, in the case of an FCM bankruptcy, because the bankruptcy code[117] and CFTC regulations[118] require pro rata distribution of cleared swap customer property to customers of the FCM, cleared swap customers are nonetheless subject to some level of fellow-customer risk.

Uncleared swaps. Unlike for cleared swaps, collateral posted to meet bilateral margin requirements for an uncleared swap does not need to be held by an FCM or by a clearinghouse. Thus, uncleared swap collateral is not subject to the same type of fellow-customer risk as futures collateral held at a clearinghouse or with an FCM. As in the case of cleared swaps, however, parties would be subject to risk of losses upon the insolvency of their counterparties.

The following chart summarizes the level of fellow-customer risk for futures, cleared swaps, and uncleared swaps.

115 Protection of Cleared Swaps Customer Contracts and Collateral; Conforming Amendments to the Commodity Broker Bankruptcy Provisions, 77 Fed. Reg. at 6344.

116 *Id.* at 6339.

117 11 U.S.C. § 766(h) (2006).

118 17 C.F.R. § 190.08(c) (2013).

FIGURE 9: COMPARISON OF EXPOSURE TO FELLOW CUSTOMER DEFAULT FOR FUTURES, CLEARED SWAPS, AND UNCLEARED SWAPS

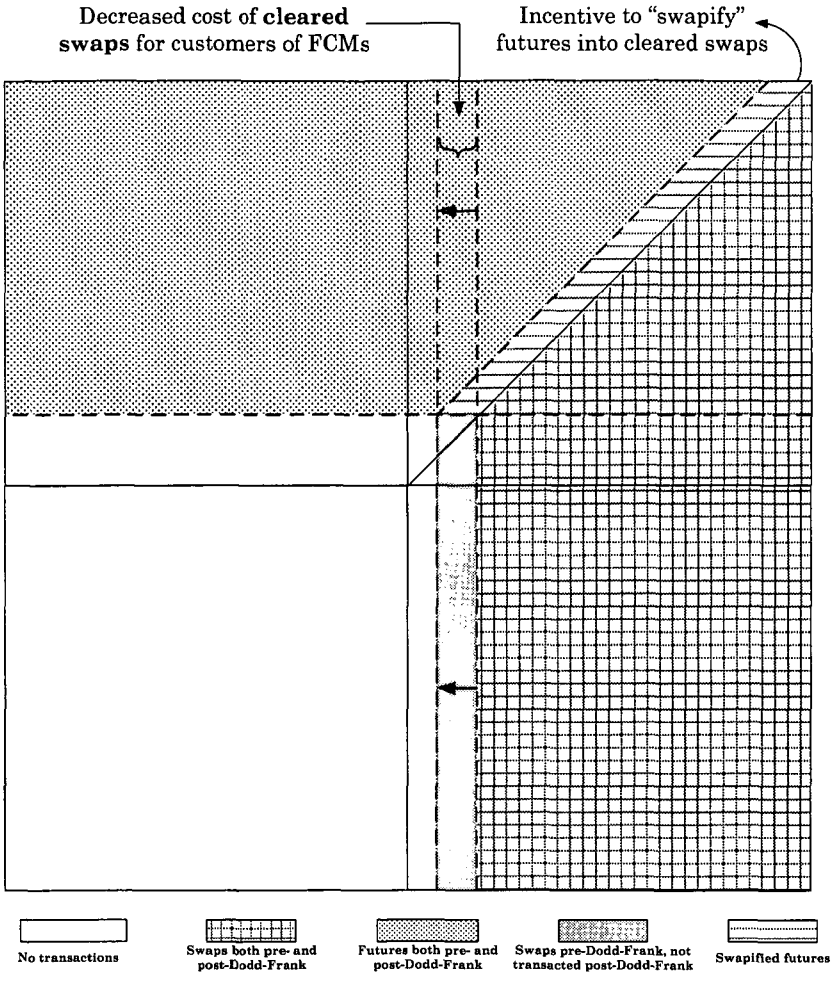
	Futures	Cleared Swaps	Uncleared Swaps
Exposure to "Fellow Customer" Default	Full	None, except in case of FCM bankruptcy	None, except in case of counterparty bankruptcy

2. Futurization Implications

Due to the added protection from "fellow-customer risk" under LSOC, cleared swap customers currently enjoy greater protection for their cleared swaps collateral than do futures customers under the futures rules. Indeed, for those futures market participants who qualify to trade swaps, the added protection afforded by LSOC may make a standardized, cleared swap transaction more appealing, even when balanced with potentially higher margin costs.

In the context of our model, the protections afforded by LSOC to cleared swaps customers lower the absolute cost of cleared swap transactions. The absolute cost of futures transactions is unaffected by LSOC. Thus, LSOC would encourage the swapification of futures contracts for all market participants, as pictured in Figure 10.

FIGURE 10: THE SWAPIFICATION EFFECTS OF LSOC



This result is, at first blush, puzzling from a policy perspective. It is inconsistent with the premise that futures market participants are less sophisticated and less able to absorb losses, and thus need more protections than their counterparts in the swap markets.[119] However, this

119 Similarly, Roberta Romano has observed that the increased risk to customer collateral for cleared versus uncleared swaps appears to be an

inconsistency can be explained at least in part by the focus of the Dodd-Frank Act on absolute protections for swaps and little focus on relative protections across the swap and futures market.

The CFTC and futures market participants are well aware of the issues—and inconsistency—resulting from LSOC's application to cleared swaps customers, but not from its application to futures customers. In February 2012, the CFTC held a roundtable discussion to explore, among other things, expanding LSOC treatment to futures.[120] While considerable technical difficulties in implementing LSOC have slowed its expansion to futures, we fully expect that the CFTC will continue to work to move towards LSOC for futures.

C. Post-Trade Transparency of Transaction Data

One of the primary critiques of the post-CFMA and pre-Dodd-Frank swap market was its extreme opacity.[121] A

unintended consequence of the Dodd-Frank Act. Romano, *supra* note 9, at 91 ("The full cost of Dodd-Frank is rendered more opaque by regulators finding, as they attempt to implement the statute, that Dodd-Frank's mandates pose unanticipated operational issues that create new risks, complicating implementation. For example, in order to decrease the risk of trading customized off-exchange derivative securities, Congress required derivative trades, wherever possible, to be cleared on exchanges. Yet, this requirement, it turns out, increases risk for pension funds and asset managers due to the way exchanges handle margin collateral, and changing exchange brokerage arrangements to reduce the risk significantly increases costs.") (internal citations omitted).

120 Press Release, CFTC, CFTC Staff to Host a Two-Day Public Roundtable to Discuss Additional Customer Collateral Protections (Feb. 23, 2012), http://www.cftc.gov/PressRoom/PressReleases/pr6188-12; *see also* CFTC, HEARING BEFORE THE COMMODITY FUTURES TRADING COMMISSION, FEBRUARY 29, 2012, A.M. SESSION (2012), *available at* http://www.cftc.gov/ucm/groups/public/@newsroom/documents/file/transcript022912am.pdf (transcript of CFTC hearing discussing customer collateral).

121 *See, e.g.*, Gary Gensler, Chairman, CFTC, The New Era of Swaps Market Reform, Keynote Address at the George Washington University Center for Law, Economics and Finance Conference (Oct. 10, 2012), http://www.cftc.gov/PressRoom/SpeechesTestimony/opagensler-124 ("When

market participant that wished to enter into swaps for hedging or other purposes would call one or more dealers, find and negotiate the best price, and enter into a swap at that price. Information about swap transactions—such as the execution of a swap, its price, and other relevant quotes provided—was not publicly available as it would be, for example, for a securities transaction executed on a national securities exchange. As a result, post-trade transparency for swaps was among the cornerstones of the Dodd-Frank Act's swap market reforms.[122]

The real economic story is more complex. While there are benefits to transparency, it is not without cost; transparency allows opportunistic market participants to learn about their competitors' trading strategies, which increases the cost to the trader of a swap.

The negative effects of post-trade transparency are particularly relevant for large trades known as "block"

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the financial crisis hit, the swaps market was the largest dark pool in our financial markets. Think about this for a moment. At $300 trillion—or $20 for every $1 of goods and services in our economy—the swaps market lacked any transparency except for that which the financial sector was willing to share."); Gretchen Morgenson, *Slipping Backward on Swaps*, N.Y. TIMES, Nov. 27, 2011, at BU1 ("When markets are opaque, the risks grow that problematic positions, like those that felled the American International Group in 2008, might once again create financial turmoil and spread through the system. Dodd-Frank sensibly asked that market participants provide trade and position details to regulators so this arena could be monitored better.").

122 Gary Gensler, Chairman, CFTC, Remarks at the National Association of Corporate Treasurers Conference: Bringing Transparency to the Swaps Market (June 2, 2011), http://www.cftc.gov/PressRoom/SpeechesTestimony/opagensler-83 ("First, [the Dodd-Frank Act] brings transparency to the time immediately before the transaction is completed, which is called pre-trade transparency. . . . Second, the Dodd-Frank Act brings real-time transparency to the pricing immediately after a swaps transaction takes place. This post-trade transparency provides all end-users and market participants with important pricing information as they consider their investments and whether to lower their risk through similar transactions. . . . Third, the Dodd-Frank Act brings transparency to swaps over the lifetime of the contracts.").

trades.[123] To explain these effects, we will consider an example involving an airline that is seeking to hedge the risks associated with the potential changes in jet fuel prices, to which it has significant exposure. It may seek to hedge its jet fuel costs over a full year by entering into a large swap on jet fuel prices. To do so, the airline would first evaluate the terms for jet fuel swaps, including their costs and sizes, that are currently offered by various dealers. Since the airline would need a very large jet fuel swap to hedge its yearly risk, it is unlikely that any single dealer would be offering, or perhaps be able or willing, to enter into a sufficiently large swap at the price offered by the dealer for a smaller transaction.

The airline could take several approaches to enter into the hedging swap it needs. It could enter into several smaller swaps offered by dealers, until the sum total of swaps it enters into meets its hedging need. However, this approach is suboptimal for two reasons. First, from an operational standpoint, the airline would prefer a single trade rather than a hodgepodge of many smaller trades with different dealers. Second, and perhaps more importantly, as the airline begins to purchase jet fuel price protection through a series of small trades, the usual supply and demand dynamic will increase the cost of jet fuel price protection. The airline's cost will increase with each subsequent transaction.

The airline has another option: a block trade. The airline could seek to negotiate a single swap with an individual dealer, asking that dealer to consider entering into a single, very large swap that would address all of the airline's yearly full jet fuel price risk. The dealer may agree to do so, but

123 Congress recognized these potential negative effects, as evidenced by the statutory requirement in the Dodd-Frank Act for regulators to establish delays in post-trade data for block trades. Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203, 124 Stat. 1376 § 727, 7 U.S.C. § 2(a)(13) (2012). *See also* Procedures to Establish Appropriate Minimum Block Sizes for Large Notional Off-Facility Swaps and Block Trades, 78 Fed. Reg. 32,866 (May 31, 2013) (to be codified at 17 C.F.R. pt. 43) (setting forth rules regarding block trades).

will likely ask the airline to pay a premium on the trade above the current market price. The premium charged by the dealer will be calculated, in part, based on the dealer's estimation of its own costs to hedge its exposure arising from the jet fuel swap with the airline.

Post-trade swap reporting may make it more difficult for the dealer to hedge a large position, such as the position it would have under the large jet fuel swap with the airline. If the block jet fuel trade was reported to the public immediately upon execution by the airline and dealer, other market participants would know that the dealer had taken on a sizable risk and that it would be seeking to hedge that risk. Market participants who would otherwise be willing to enter into offsetting jet fuel contracts with the dealer (for example, jet fuel futures or jet fuel swaps) will demand a higher price for doing so. As a result, the dealer's cost of hedging a swap will increase, and this increased price will be passed on to the airline (and, likely, to consumers in the form of higher ticket prices).

Delays in the public dissemination of information about block trades can, in part, address this problem. The effectiveness of these delays depends, however, on the proper identification of block trades and on a sufficiently long time delay afforded to block trades to allow dealers to hedge their positions before the market learns about the original block trade. Since it is impossible to calibrate both of these variables perfectly, post-trade public dissemination may have negative effects in some cases, as described in greater detail below.

1. The Regulatory Regime

Futures. As described above, all futures contracts must be executed on a CFTC-registered DCM,[124] also known as a "futures exchange." Futures exchanges must publicly report futures transaction data by the end of each trading day[125] but are not required as a regulatory matter to publicly

124 *See* Commodity Exchange Act § 4d(a), 7 U.S.C. § 6d(a) (2012).

125 *See* Core Principle VII, 17 C.F.R. app. B § 36 (2013).

disseminate transaction information in real time. Futures exchanges do, however, license with market data service firms to provide real-time dissemination of futures transaction data, subject to delays for block transactions.[126]

Cleared Swaps. The Dodd-Frank Act amended the Commodity Exchange Act to put in place new requirements for the real-time publication of swap transaction data.[127] The CFTC's rules implementing this provision, which are already effective,[128] require that information about all swap transactions be transmitted to a swap data repository "as soon as technologically practicable" after execution of the swap.[129] For exchange-traded swaps—the significant majority of which will ultimately be subject to the mandatory clearing requirement[130]—the DCM or swap execution facility on which the swap is executed is responsible for reporting this information to the swap data repository, which in turn

126 Gary Gensler, Chairman, CFTC, CFTC Roundtable, *supra* note 3, at 16–17 ("The time delays [for real-time reporting] are still between 30 minutes long and sometimes up to two days for end user to end user transactions, but generally if it's a swap dealer, it's on a platform that will come down to 15 minutes this October for interest rates and credit index swaps and for the other asset classes the following January. That 15 minute delay is something very similar to TRACE. . . . The futures marketplace has a time delay for blocks for about five minutes. So after we complete the block rule for swaps, trades smaller than a block will be reported as soon as technologically practicable. Those are the words that Congress has in its statute."). The regulations governing real-time reporting have been codified in Part 43 of the CFTC's regulations. *See* Real-Time Public Reporting of Swap Transaction Data, 77 Fed. Reg. 1182 (Jan. 9, 2012) (amending 17 C.F.R. pt. 43).

127 Commodity Exchange Act § 2(a)(13), 7 U.S.C. § 2(a)(13).

128 Press Release, CFTC, CFTC Announces Real-Time Public Reporting of Swap Transactions and Swap Dealer Registration Began December 31, 2012 (Jan. 2, 2013), http://www.cftc.gov/PressRoom/PressReleases/pr6489-13.

129 17 C.F.R. § 43.3(a).

130 All swaps subject to the CFTC's mandatory clearing requirement that are made available to trade on a DCM or swap execution facility are required to be exchange-traded. *See* Commodity Exchange Act § 2(h)(8), 7 U.S.C. § 2(h)(8).

must publicly disseminate some of that information.[131] For swaps that are not exchange-traded, one of the counterparties, known as the "reporting counterparty," must do so.[132] Publically disseminated information includes the rounded notional value of a swap, its price, the underlying asset, and other information necessary for market participants to understand the price of the swap.[133]

In general, the swap data repository must publicly disseminate the information received "as soon as technologically practicable" after receiving the information.[134] However, information for some large swap transactions, such as the block transactions in our jet fuel example, will be subject to a delay between the time that the swap data repository receives the information and the time that it is disseminated to the public.[135] As described above, this delay is designed to mitigate the concern that market participants could front-run or engage in other trading strategies to inappropriately exploit the market impact of a block transaction.[136] Public dissemination of information about block transactions in cleared swaps will be delayed for thirty minutes through early January 2014. Thereafter, the delay will be set at fifteen minutes.[137]

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131 17 C.F.R. § 43.3(b)(1).

132 *Id.* § 43.3(a)(3).

133 17 C.F.R. pt. 43 app. A, tbl.A1.

134 17 C.F.R. § 43.3(b)(2).

135 *Id.* § 43.5(d). The CFTC rules provide for delays in disseminating information pertaining to large notional off-facility swaps as well. *Id.* § 43.5(e)–(h).

136 *See* Real-Time Public Reporting of Swap Transaction Data, 77 Fed. Reg. 1182, 1239 (Jan. 9, 2012) (to be codified at 17 C.F.R. pt. 43) ("The Commission believes that the time delay regime established in § 43.5 will enhance the competitiveness of swap markets by protecting market liquidity until appropriate minimum block sizes are adopted. Such time delays, which initially apply until a swap or group of swaps has an appropriate minimum block size, reduce the risk of large notional trade data being exposed to the market before the trade can be adequately hedged (*e.g.*, front-running or trading ahead).").

137 17 C.F.R. § 43.5(d).

Uncleared swaps. The real-time reporting regime for uncleared, non-exchange-traded swaps is largely similar to that for cleared swaps. As with cleared swaps, key information about uncleared swaps will be disseminated to the public. For uncleared swaps, in nearly all cases, the swap information will be provided to the swap data repository by the "reporting counterparty," which will generally be the more sophisticated market participant to minimize the overall burden (and cost) on the transaction resulting from the reporting requirements.[138] There are similar block trade delays for off-exchange swaps as for exchange-traded swaps.[139]

2. Futurization Implications

The implications of the new reporting regime for swaps are different for different types of market participants and, furthermore, vary for each market participant depending on the type of transaction. Therefore, unlike the two previous cases discussed above, the net swapification or futurization effect depends on two variables that may push market participants in different directions.

First, the post-trade transparency requirements will affect large market participants (those with negotiating power) and small market participants (those with less negotiating power) differently. In the absence of post-trade transparency, large market participants may be able to negotiate relatively favorable terms. Once post-trade transparency is introduced, and dealers can no longer provide such market participants better pricing without that knowledge becoming public, these large market participants may experience an increase in the absolute cost of their

138 For example, if the transaction is between a swap dealer and non-swap dealer counterparty, the swap dealer will be the reporting counterparty. The CFTC's rules establish a waterfall for the reporting counterparty, the details of which differ depending on which reporting rule is at issue. For the real-time reporting counterparty waterfall, see 17 C.F.R. § 43.3(a)(3).

139 *Id.* § 43.5(e)–(h).

swaps. Conversely, in the absence of post-trade transparency, small market participants may receive less favorable pricing than their larger competitors. Once post-trade transparency is introduced, and these smaller market participants can point to transactions the dealer has executed with other customers at more favorable terms to the customer, the small market participants may see the absolute cost of their swaps decrease.

Second, the post-trade transparency requirement will differentially affect trades of different sizes. The additional information provided to market participants about the price at which similar swaps have been transacted will likely decrease the cost of relatively small transactions (that is, those that would not move the market). However, the countervailing effect described above for block trades could increase the price of large transactions (those that could move prices). As described above, while reporting delays for block trades may mitigate some of the cost-increasing effect on large trades, the combination of short time delays adopted by the CFTC and the inevitability of mischaracterizing some large trades that may move the market as non-block trades makes it likely that this effect will be felt by counterparties to large trades.

In sum, the cost effects of post-trade transparency will depend both on the type of market participant and the size of trade, as shown in the following table.

FIGURE 11: COMPARISON OF COST EFFECTS BASED ON SIZE OF MARKET PARTICIPANT AND WHETHER TRADE IS BLOCK

	Large Market Participant	**Small Market Participant**
Small Trade	Direction of absolute cost change unclear (depends whether increase due to trade size exceeds decrease due to market participant type)	Absolute cost of swap decreases (size of trade and market participant type both decrease absolute cost of swap)
Block Trade	Absolute cost of swap increases (size of trade and market participant type both increase absolute cost of swap)	Direction of absolute cost change unclear (depends on whether increase due to market participant type is greater than increase due to size of trade)

The two subsequent figures illustrate the futurization implications under two circumstances: (1) where the absolute costs of a swap decrease for a particular market participant for a particular transaction and (2) where the opposite is true. Where there is no clear absolute cost decrease or increase for a swap transaction, we would expect to see no futurization effect.

FIGURE 12: THE FUTURIZATION EFFECTS OF TRANSPARENCY RULES WHEN ABSOLUTE COSTS INCREASE

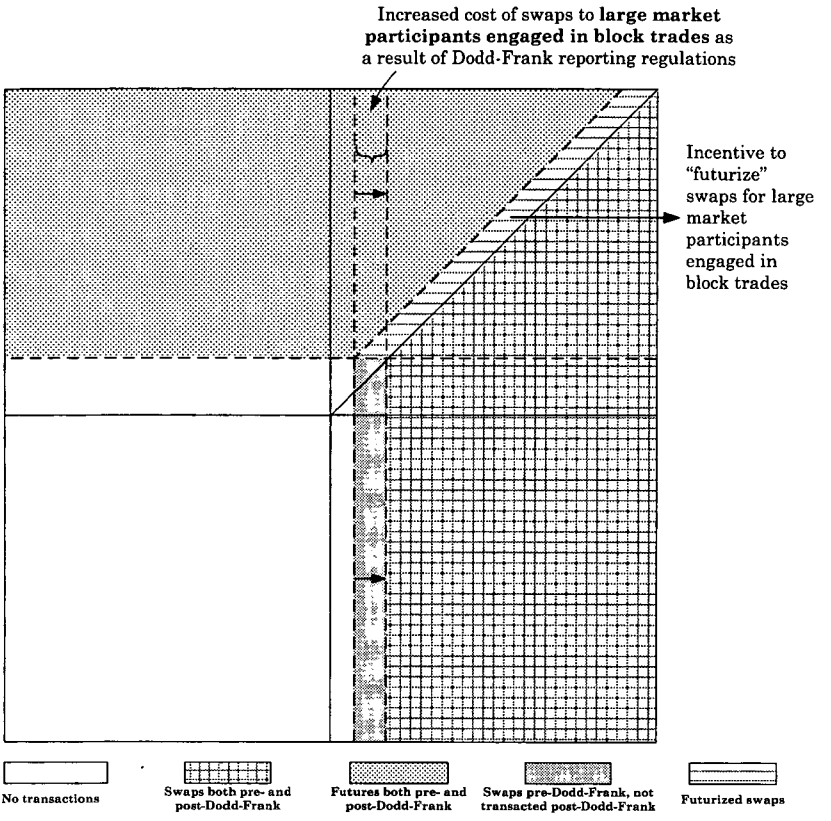
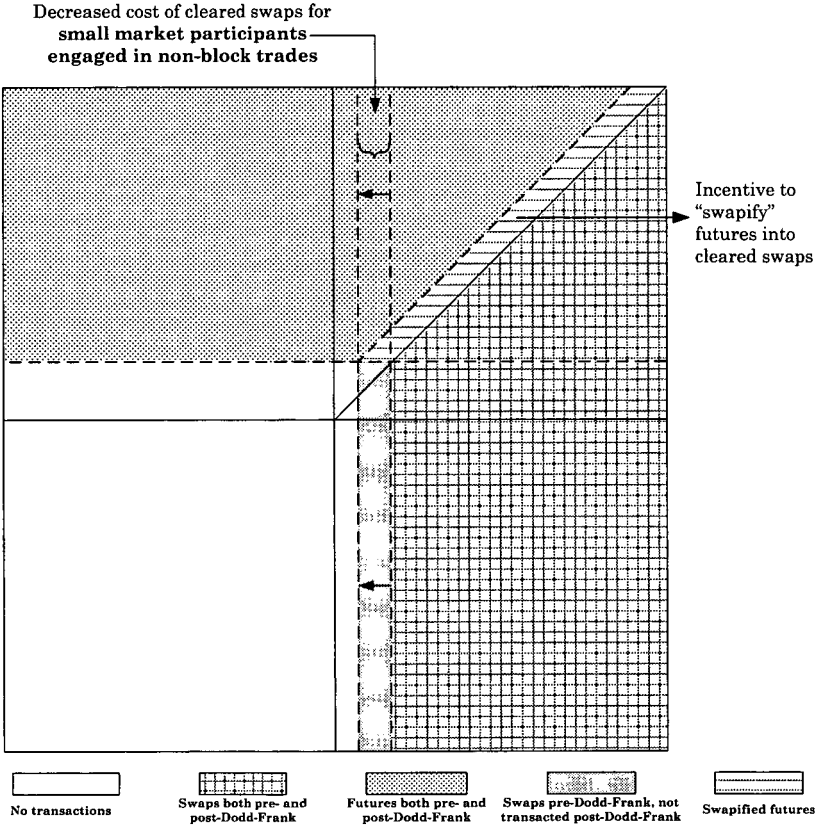


FIGURE 13: THE SWAPIFICATION EFFECTS OF TRANSPARENCY RULES WHEN ABSOLUTE COSTS DECREASE



VI. POLICY IMPLICATIONS OF REGULATION THROUGH SUBSTITUTION AND CONCLUSION

As discussed in the previous Part, our regulation through substitution model suggests that some of the CFTC's swap regulations may act contrary to the desired policy results of the Dodd-Frank Act and of the CFTC. Regardless of the specific aims that the CFTC seeks to achieve, a better understanding of the regulation through substitution effect would allow the agency to predict some such unintended consequences. Armed with this predictive tool, we believe that the CFTC can apply the regulation through substitution

analysis to design regulations that more effectively realize its policy goals and to assess the costs and benefits of proposed regulations. Other regulators that similarly oversee multiple related regulatory regimes may also use this tool in similar contexts to better address their policy concerns.

First, the CFTC and other similarly situated regulators should use the regulation through substitution model to design regulatory regimes better tailored to achieve their specific policy objectives. To date, the CFTC does not appear to have done so, which has led to the unexpected outcomes described in Part V. The CFTC has made policy choices that will: (1) through margin requirements raise the absolute cost of uncleared swaps for financial, but not commercial, entities; (2) through customer collateral protection requirements decrease the absolute cost of cleared, but not uncleared, swaps; and (3) through swap data transparency requirements increase the absolute cost of swaps for large market participants and those executing block trades, and decrease the absolute cost of swaps for small market participants and those executing swaps with small notional sizes. Each of these changes in the absolute cost of swaps wields, as we have demonstrated, a corresponding effect on the relative price of futures versus swaps. As a result, they will encourage varying levels of futurization or swapification based on the market segment—though not always in the direction one might expect based on the historical orientation of each regime.

We believe that the CFTC could improve its swap regulations by considering how such regulations may cause market participants to transact in futures rather than swaps, or vice versa. To gauge the appropriateness of its swap regulations, the CFTC should assess whether a proposed swap regulation discourages market participants from entering into transactions (either as swaps or as futures) that, taking into account externalities, are overall beneficial for the market. The CFTC should also consider whether the transactions that would be futurized or swapified are those that the CFTC wants to be subject to the

futures regulatory regime or swap regulatory regime. Undertaking such an analysis would help the CFTC achieve greater protections for market participants that are more tailored to specific risks or regulatory concerns posed by different types of transactions, the purposes of those transactions, and the particular circumstances of the market participants being regulated.

More generally, we believe that while regulators in similar situations may intuitively understand the absolute and relative cost effects of their regulatory actions, the analysis in this Article could be a useful tool for formalizing that intuition as a tool for conscious regulatory decisions. Rather than trying to assess *ex post* whether a regulation has the intended or desired effect, regulators with oversight over related regimes should *ex ante* decide on their policy goals and use their influence over the absolute cost of those regimes to achieve that goal.

Second, the CFTC and other regulators can use the regulation by substitution analysis to better predict the costs imposed, and benefits provided, by the proposed regulations. Under the Commodity Exchange Act, the CFTC must engage in a cost-benefit analysis in connection with all swaps and futures regulations.[140] Since the passage of the Dodd-Frank Act, the CFTC has faced claims that its cost-benefit analyses are insufficient. For example, Bloomberg has sued the CFTC alleging that it has not met its statutory cost-benefit analysis obligations,[141] and an internal report from the CFTC's inspector general analyzing three particular rules stated that the Office of General Counsel, in conducting the cost-benefit analyses, "appeared to rely heavily on prior somewhat stripped down analysis" and that "similar

140 In particular, Section 15(a) of the Commodity Exchange Act provides that CFTC action, including rulemaking, must take into account "[t]he costs and benefits of the proposed [CFTC] action," including "considerations of protection of market participants and the public" and "considerations of the efficiency, competitiveness, and financial integrity of futures markets." 7 U.S.C. § 19(a)(2) (2006).

141 Complaint at 29, Bloomberg L.P. v. CFTC, 2013 WL 2458283 (D.D.C. June 7, 2013) (Civ. No. 13–523(BAH)), 2013 WL 1629236.

approaches to economic analysis in the context of federal rulemaking have proved perilous for financial market regulators."[142]

As the CFTC has regulatory authority over both the futures and swaps markets, it can—and we believe should—take into consideration the effect of its new regulations on the absolute and, perhaps as importantly, relative costs of futures and swaps. Indeed, one could read the language of the Commodity Exchange Act to require the CFTC to undertake such considerations, as the relative costs of futures versus swaps most certainly affects the efficiency and competitiveness of both the futures and swap markets. Moreover, the relative costs (and benefits) of consumer protection provisions in the swap versus futures markets are likely to underlie decisions made by market participants in deciding between these markets.

We fully acknowledge that the CFTC faces a difficult task in engaging in cost-benefit analyses with respect to swap-related rulemaking.[143] Among other reasons, there is relatively little data available about the swap markets on which to base a rigorous cost-benefit analysis. In this respect, we submit that assessing relative costs and benefits of new swap or futures regulations may, at least in some circumstances, be more straightforward than assessing absolute costs. Such an assessment would also be informative to market participants. The CFTC has significantly more data about the futures markets than the swap markets; thus, setting the baseline for an economic analysis with futures data may be easier. Even simple

142 OFFICE OF THE INSPECTOR GEN., CFTC, A REVIEW OF COST-BENEFIT ANALYSES PERFORMED BY THE COMMODITY FUTURES TRADING COMMISSION IN CONNECTION WITH RULEMAKINGS UNDERTAKEN PURSUANT TO THE DODD-FRANK ACT ii (June 13, 2011), *available at* http://www.cftc.gov/ucm/groups/public/@aboutcftc/documents/file/oig_investigation_061311.pdf.

143 For a discussion of the difficulties of assessing the costs and benefits of financial regulation, see Howell E. Jackson, *Variation in the Intensity of Financial Regulation: Preliminary Evidence and Potential Implications*, 24 YALE J. ON REG. 253, 257–63 (2007).

models, such as the one we have developed in this Article, can provide some instruction on the likely impacts of new regulation.

In sum, the recent trend towards futurization of swaps is a predictable and understandable market reaction to an increase in absolute cost of one good (swaps) together with a smaller, if any, increase in the cost of a substitute good (futures). A similar substitution effect is present whenever a new regulation increases the cost of transacting in one financial product overseen by a regulator relative to another financial product overseen by the same regulator, provided that the two products can produce economically similar results. By developing a simple economic model of regulation through substitution, this Article seeks to explain the futurization trend as a function of such changes in relative costs. We believe that the CFTC, and other similarly situated regulators, should consider applying the regulation through substitution analysis to better achieve their policy goals and to better assess the costs and benefits of proposed regulations.