

**Hit or Miss:
Regulating Derivative Markets to Reduce Hedging Costs
at Non-Financial Companies**

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My name is John E. Parsons. I am a Senior Lecturer in the Finance Group at the MIT Sloan School of Management and the Head of the MBA Finance Track. I am also the Executive Director of the MIT Center for Energy and Environmental Policy Research. I have a Ph.D. in Economics from Northwestern University. At MIT I teach a course on risk management for non-financial companies, the so-called end-users or commercial hedgers, and I co-author a blog on the subject, bettingthebusiness.com. I have published research on theoretical and applied problems in hedging and risk management, and I have been a consultant to many non-financial companies on hedging problems of various kinds, as well as on other financial issues.

Executive Summary

Derivative markets are an important tool enabling non-financial companies to reduce their risk and manage their financing. Effective regulation of these markets can lower companies hedging costs and help improve productivity. Ineffective regulation can raise costs and reduce productivity. In this testimony, I address what type of action is likely to be effective in reducing hedging costs at non-financial companies and what type of action is likely to be ineffective or counterproductive.

One component of the cost a non-financial company pays to hedge risk using derivatives arises from the company's own credit risk tied to that derivative trade. No regulation or legislation can reduce

this cost. Regulations and legislation targeted to avoiding or reducing this cost are misguided at best and dangerous at worst. For example, legislation that directs bank regulators to turn a blind eye to the credit risk embedded in non-margined derivatives is dangerous. It cannot reduce the cost of hedging, but it can undermine the soundness of the financial system and impose great costs on taxpayers. Ultimately, non-financial companies suffer, too, from a less stable financial system.

A second component of the cost a non-financial company pays to hedge risk using derivatives arises from the financial system's cost to provide the derivative. Wise regulation of the derivative marketplace can reduce this cost. This is where regulatory and legislative attention should be directed. In particular, central counterparty clearing is an important and historically proven innovation that reduces the financial system's total cost of providing derivatives to hedge commercial risks. The Dodd-Frank Act's re-imposition of central counterparty clearing on a large fraction of derivative trades lowers the cost of hedging by non-financial companies. How successfully central counterparty clearing lowers the cost depends upon the details of its implementation. Wise regulatory supervision can help to maximize the benefits derived from central counterparty clearing.

Opponents of reforming the derivatives markets have commissioned several studies to allege large costs from expanding central counterparty clearing. The cost estimates in these studies have been repeatedly and thoroughly discredited. They all attribute to central counterparty clearing a cost that is also present without central counterparty clearing, albeit in different form. They all completely ignore how central counterparty clearing lowers the total cost of the financial system.

Margins and the Cost of Hedging by Non-Financial Companies

When a non-financial company uses derivatives to hedge commercial risk, the derivative trade generates some credit risk which is costly. That risk is inherent to the derivative trade, regardless of the different form the trade can take.¹ If the derivative trade is not margined, then the credit risk is embedded in the derivative. If the derivative trade is margined, then the credit risk is separated from the derivative and appears in the line of credit used to finance the margin. For any given company, whether a derivative is margined or not changes where the credit risk appears, but does not change how much credit risk is produced by the derivative trade.

¹ "Hedging and Liquidity." With Antonio S. Mello. Review of Financial Studies 13, No. 1 (Spring 2000): 127–53.

It is easy to misunderstand the relationship between the practice of margining and the cost of trading derivatives. Because the credit risk in a non-margined derivative is embedded in the derivative, and because the cost is paid implicitly through the price terms for the derivative, it is easy to overlook the cost. The practice of margining forces a separate accounting for the credit risk and makes the cost paid for this credit risk explicit. Consequently, many people mistakenly think that the practice of margining creates a new cost.

This misunderstanding shows up in the memorandum prepared by the Committee Staff in preparation for this hearing. That memo states that “imposing margin requirements on end-users that are not financial firms would divert capital from operating budgets, leaving end-users with less capital from operating budgets, leaving end-users with less capital for investment and job creation.” This claim is simply not true. Margin requirements do not drain a company’s capital. If a company has enough debt capacity that the derivative seller will extend it the implicit line of credit, the company also has enough debt capacity that a bank or other financial institution will extend it the explicit line of credit to fund the required margin. A requirement to margin derivatives does not drain any capital from non-financial companies: instead, the requirement only forces the credit to be extended explicitly. The amount of credit required to trade the derivative is determined by the company’s specific risks, by the specific risks of the derivative, and by their interaction. The practice of margining does not change or add to the capital requirement.

My colleague, Antonio Mello, and I have expanded on the points made here in much greater length in our paper “Margins, Liquidity and the Cost of Hedging.”² In that paper, we provide a simple example of a non-financial company hedging the price of oil. We show that the cost of hedging is the same using a non-margined derivative and a margined derivative. We show that the credit embedded in the non-margined derivative is the same as the credit used to finance the margined derivative. Margining adds zero cost to the non-financial company hedging with the oil derivative when attention is paid to both the explicit and the implicit costs paid by the company.

The lobbying around the rulemaking for the Dodd-Frank Act has yielded a number of studies designed to show that a margin mandate would impose a large cost on non-financial companies and the economy. Unfortunately, none of these studies are credible. A typical example is the April 2010 study by

² “Margins, Liquidity and the Cost of Hedging.” With Antonio S. Mello. Center for Energy and Environmental Policy Research Working Paper #2012-005, May 2012.
web.mit.edu/ceep/www/publications/workingpapers/2012-005.pdf

Keybridge Research, commissioned by the Coalition for Derivatives End-Users, which purported to show a cost to the economy of \$5-\$6 billion annually in capital spending and a loss of 100,000-120,000 jobs. However, this study starts by assuming away any costs associated with the credit risk embedded in a non-margined derivative. To a first approximation, the cost of the credit risk embedded in a non-margined derivative is equal to the cost of the credit line needed to fund the margin on a derivative, so the study's estimated cost of margining is entirely a consequence of this fallacious assumption.³

A number of bills have been proposed in Congress which seek to reduce the cost of hedging at non-financial companies by legislating the terms for selling margined or non-margined derivatives. In particular, some bills direct bank regulators to turn a blind eye to the credit risk embedded in non-margined derivatives.⁴ This is dangerous. A prudently managed bank will have policies, procedures and controls to assess how much total credit risk it has in its portfolio of non-margined derivatives. If our bank supervisors are doing their job, they will require the bank to recognize this credit risk and finance the bank correspondingly. Turning a blind eye does not eliminate the credit risk. The risk is there. Ignoring it can only undermine the soundness of the financial system. Ultimately, it is taxpayers who bear the cost of making the financial system vulnerable. A poorly supervised financial system also hurts non-financial companies. Attempting to lower costs by hiding or ignoring or mismanaging risks does not produce any real benefit for the U.S. economy.

Central Counterparty Clearing Reduces the Cost of Trading Derivatives

Many people who are unfamiliar with the long history of derivatives markets in the US think of the Dodd-Frank Act's reform of the OTC derivatives markets as a regulatory gamble that imposes new, untested rules on the markets. Exactly the opposite is true. The main spirit behind the Dodd-Frank Act's reform of the OTC derivatives market is to return the country to a framework that had served the country so well throughout the 20th century.

³ "An Analysis of the Coalition for Derivatives End-Users' Survey on Over-the-Counter Derivatives," Prepared by Keybridge Research for the Coalition for Derivatives End-Users, February 11, 2011. Another example of a similarly flawed study is "Cost-Benefit Analysis of the CFTC's Proposed Swap Dealer Definition," Prepared by NERA Economic Consulting for the Working Group of Commercial Energy Firms, December 20, 2011.

⁴ Example bills are discussed in these blog entries:
bettingthebusiness.com/2012/08/02/turn-a-blind-eye-to-credit-risk/
bettingthebusiness.com/2011/10/06/it%E2%80%99s-not-all-about-end-users/

One element of this framework is central counterparty clearing.⁵ Far from being a new and untested regulation, central counterparty clearing is a landmark innovation of late 19th century derivative markets. It is an innovation that enabled the successful growth of derivatives trade in the U.S. throughout most of the 20th century. Central counterparty clearing was introduced to the U.S. in 1896 by the Minneapolis Grain Exchange, home to derivative trade in grains.⁶ This innovation helped to reduce the aggregate amount of risk in the system and therefore lowered the amount of capital required to manage derivative markets. This lowered the cost charged to non-financial companies hedging with derivatives. Central counterparty clearing also improved access to the derivative market, keeping the market competitive and growing. Established derivative exchanges in other cities gradually recognized these advantages of central counterparty clearing and copied this innovation. As new futures exchanges were established, central counterparty clearing was often the chosen structure right from the start. This was the case at the Chicago Mercantile Exchange, established in 1919 for trade in butter, eggs and other products. In 1925, the Chicago Board of Trade, which was the largest derivatives exchange at the time, switched to central counterparty clearing. From that date forward, central counterparty clearing reigned as the standard practice for derivatives trading in the U.S., and remained so for the next 50 years. This was an era that worked well for commercial enterprises looking to hedge their business risks, and an era that worked well for a growing US economy.

When the OTC swap market developed in the late 20th century, it was originally a useful venue for innovative and custom designed derivatives that were ill-suited to trade on exchanges and to central counterparty clearing. This market was exempt from regulatory supervision, and financial institutions quickly used it to host trade in all kinds of standardized and standardizable derivatives, not just innovative or custom designs. It quickly became the dominant derivative marketplace. Because the OTC swap market used bilateral clearing, this shift away from traditional, regulated derivative markets also entailed a shift away from central counterparty clearing.

The Dodd-Frank Act's mandate that the majority of derivative trades once again be traded using central counterparty clearing represents a return to a tested innovation in market structure. American finance and industry has great experience in perfecting this regulatory innovation over many decades, and further improvements are possible. The studies cited earlier which advertise an incredibly large cost

⁵ A good reference on the mechanics of central counterparty clearing is the Staff Report from the Federal Reserve Bank of New York, "Policy Perspectives on OTC Derivatives Market Infrastructure, by Darrell Duffie, Ada Li and Theo Lubke, No. 424, January 2010.

⁶ At the time, the Exchange was known as the Minneapolis Chamber of Commerce.

to margining derivatives all ignore the benefits of central counterparty clearing and how it reduces the total cost to the system.

How successfully central counterparty clearing succeeds in reducing the total amount of credit risk in the system does depend upon how it is implemented—for example, by maximizing the amount of transactions in the system that can be netted out.⁷ But exemptions from clearing requirements do not facilitate reducing the total risk in the system. Congressional attention should be focused on maximizing the benefits of central counterparty clearing by maximizing the effective amount of netting, and not on manufacturing new or expanded exemptions to central counterparty clearing.

Conclusion

Derivative markets are a useful innovation that promise non-financial companies a way to better manage many risks and more efficiently finance themselves. When derivatives markets are well managed and supervised, they contribute to economic productivity. But, when poorly managed and supervised, the potential of these markets is unrealized and, worse still, they pose grave danger to the economy. The financial crisis of 2007-2008 serves as a clear example of the terrible economic and social damage that can follow from a poorly supervised financial system, including poorly managed derivative markets. Many non-financial companies were forced to dramatically cut investments and reduce output due to the financial crisis. As the implementation of Title VII of the Dodd-Frank Act is reviewed, it is important that we focus our attention on proven innovations in regulating derivatives markets, such as central counterparty clearing. It is equally important that we reject options that pretend to lower costs by ignoring those costs.

⁷ Some examples for how the success of central counterparty clearing can vary are contained in the Staff Report from the Federal Reserve Bank of New York, “Policy Perspectives on OTC Derivatives Market Infrastructure, by Darrell Duffie, Ada Li and Theo Lubke, No. 424, January 2010.