ORAL ARGUMENT NOT YET SCHEDULED

No. 16-5086

UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

METLIFE, INC.,
Plaintiff-Appellee,

v.

FINANCIAL STABILITY OVERSIGHT COUNCIL,
Defendant-Appellant,

BETTER MARKETS, INC.,
Intervenor.

On Appeal from the United States District Court for the District of Columbia
No. 1:15-cv-00045-RMC (Hon. Rosemary M. Collyer)

BRIEF OF PROFESSORS VIRAL V. ACHARYA, ROBERT ENGLE, THOMAS PHILIPPON, AND MATTHEW P. RICHARDSON AS *AMICI CURIAE* IN SUPPORT OF APPELLANT

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June 23, 2016

CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES

Pursuant to Circuit Rule 28(a)(1), undersigned counsel for *amici curiae* certifies as follows:

A. Parties and *Amici*

The plaintiff in the district court, and the appellee in this Court, is MetLife, Inc. The defendant in the district court, and the appellant in this Court, is the Financial Stability Oversight Council ("Council"). Better Markets, Inc. moved for and was granted intervenor status.

The following *amici* filed briefs in the district court: (1) Professors Kate Andrias, Michael S. Barr, John C. Coffee, Jr., Darrell Duffie, Ronald J. Gilson, Jeffrey N. Gordon, Robert J. Jackson, Jr., Kathryn Judge, Andrew Metrick, Gillian Metzger, Saule T. Omarova, Amiyatosh Purnanandam, Jennifer Taub, Adrian Vermeule, and David Zaring; (2) Professors Viral V. Acharya, Robert Engle, Thomas Philippon, and Matthew P. Richardson; (3) Professors Aviva Abramovsky, Hazel Beh, Joseph M. Belth, Max N. Helveston, Donald T. Hornstein, John Patrick Hunt, Patricia A. McCoy, Daniel Schwarcz, Steven L. Schwarcz, Jeffrey W. Stempel, Peter N. Swisher, Constance Wagner, Robert F. Weber, and Jennifer Wriggins; (4) Professors Tamar Frankel, Jonathan R. Macey, Keith Sharfman, and Therese M. Vaughan; (5) the National Association of Insurance Commissioners;

(6) the American Council of Life Insurers; and (7) the Chamber of Commerce of the United States of America.

B.   Ruling Under Review

At issue in this appeal is the March 30, 2016 Order by the Honorable Rosemary M. Collyer, denying the Council's motion to dismiss or for summary judgment, and granting in part and denying in part MetLife's cross motion for summary judgment. JA812-13. The district court's opinion is not yet reported, but is available at 2016 WL 1391569 and is reproduced at JA779-811.

C.   Related Cases

Amici adopt the statement of related cases set forth in the brief for appellant Financial Stability Oversight Council.

SEPARATE *AMICI CURIAE* BRIEF

Pursuant to D.C. Circuit Rule 29(d), counsel for *amici* Professors Viral V. Acharya, Robert Engle, Thomas Philippon, and Matthew P. Richardson certify that a separate brief is necessary for their presentation to this Court due to the specialized nature of their distinct expertise. None of the other *amici* of which we are aware will be in a position to discuss the economic analysis of systemic risk in the same way as the above *amici*. Accordingly, *amici*, through counsel, certify that filing a joint brief would not be practicable.

<div style="text-align:right">

   /s/ *Gregory G. Rapawy*

Gregory G. Rapawy

</div>

June 23, 2016

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[*] Authorities principally relied upon are marked with an asterisk.

GLOSSARY

ACLI	American Council of Life Insurers
AIG	American International Group
Council	Financial Stability Oversight Council
JA	Joint Appendix
NYU Stern	New York University Stern School of Business

STATEMENT OF INTEREST OF *AMICI CURIAE*[1]

Amici are professors of economics who study systemic risk. Their research addresses conditions under which the distress of financial institutions can damage the economy and types of regulation that lessen the risk of such damage. *Amici* have studied the global financial crisis of 2008 and made recommendations to policymakers concerning measures to reduce the risk of similar adverse events in the future and mitigate the consequences of any that occur. They have also studied the role of large insurance companies in creating systemic risk. From their studies, *amici* are familiar with the work of the Financial Stability Oversight Council.

Amici research, write, speak, and testify on the topics of systemic risk and related regulation. They work to ensure that legislatures, agencies, and courts have enough information on those sometimes technical subjects to make the best decisions. Their perspective may help this Court by providing context and corroboration for the Council's action under review.

Amici's individual affiliations (for identification only, and not to indicate endorsement), credentials, and some relevant activities are set forth below.

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[1] No party's counsel authored this brief in whole or in part; no party or party's counsel contributed money to fund preparing or submitting this brief; and no person – other than *amici* or their counsel – contributed money to fund preparing or submitting this brief. *See* Fed. R. App. P. 29(c)(5). All parties have consented to the filing of this brief.

Viral V. Acharya is the C.V. Starr Professor of Economics in the Department of Finance at New York University Stern School of Business ("NYU Stern"). He serves on the Economic Advisory Committee of the Financial Industry Regulation Authority, the International Advisory Board of the Securities and Exchange Board of India, and the Advisory Council of the Bombay (Mumbai) Stock Exchange Training Institute; and is an Academic Research Council Member of the Center for Advanced Financial Research and Learning. He is an Academic Advisor to the Federal Reserve Banks of Cleveland and New York. In the past, he has advised the Federal Reserve Banks of Chicago and Philadelphia, the Board of Governors, and the European Systemic Risk Board.

Robert Engle is the Michael Armellino Professor of Finance at New York University Stern School of Business. He was awarded the 2003 Nobel Prize in Economics for research on autoregressive conditional heteroskedasticity. He is the Director of the Volatility Institute at the Stern School at NYU. In this role he has developed research tools to track risks in the global economy, which are publicly available on the V-LAB website. V-LAB publishes the NYU Stern Systemic Risk Rankings, which are discussed in this brief. Professor Engle is a member of the National Academy of Science and was a member of the Joint CFTC-SEC Advisory Committee on Emerging Regulatory Issues to investigate the "Flash Crash"; the

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Office of Financial Research Advisory Committee; and the International Advisory Panel of the Risk Management Institute.

Thomas Philippon is a Professor of Finance at NYU Stern. His research involves the interaction of finance and macroeconomics: in particular, the design of optimal interventions during financial crises and the links between financial markets and the real economy. Professor Philippon was named one of the "top 25 economists under age 45" by the International Monetary Fund and has won the 2013 Bernácer Prize for Best European Economist under 40, the 2010 Michael Brennan & BlackRock Award, the 2009 Prize for Best Young French Economist, and the 2008 Brattle Prize for the best paper in Corporate Finance.

Matthew P. Richardson is the Charles E. Simon Professor of Applied Financial Economics at NYU Stern; the Sidney Homer Director of the Salomon Center for the Study of Financial Institutions, a leading financial research center; and a Research Associate of the National Bureau of Economic Research. He recently co-edited three books on the financial crisis and co-authored another. *See Restoring Financial Stability: How to Repair a Failed System* (2009); *Regulating Wall Street: The Dodd-Frank Act and the New Architecture of Global Finance* (2010); *Modernizing Insurance Regulation* (2014); *see also Guaranteed to Fail: Fannie Mae, Freddie Mac and the Debacle of Mortgage Finance* (2011).

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INTRODUCTION AND SUMMARY

The Financial Stability Oversight Council ("Council") has determined that, if MetLife experiences material financial distress, it could threaten the financial stability of the United States. The economic concept of "systemic risk" – the extent to which a firm contributes to the risk that the economy as a whole will suffer harm – provides context for the Council's determination. A growing body of literature, including the work of *amici*, recognizes that insurers, like other financial actors, contribute to systemic risk when they engage in activities that expose them to risk from distress elsewhere in the economy and are positioned to transmit onwards any distress they experience. The Council's findings concerning MetLife are consistent with this literature and supported by *amici*'s quantitative assessment of MetLife's systemic risk.

I. In general, a financial firm can be described as systemically risky if it has the potential under stress conditions to harm the broader economy by contributing to an aggregate capital shortfall of the financial system. A regulator concerned with systemic risk should ask whether a firm's financial activities could potentially contribute to a system-wide event such as the crisis of late 2008. That can happen when a firm is so positioned that its distress will likely cause distress in other firms – including its counterparties, creditors, or customers.

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There is an important difference between asking whether a firm is systemically risky and asking how likely that firm is to fail. The district court thought the Council had committed to evaluate the likelihood of MetLife's material distress as part of its consideration whether to designate MetLife. Such an evaluation cannot be made in any useful way, because the distress that should concern the Council is distress during a systemic crisis, and such crises cannot be predicted in advance.

II.   Modern insurers engage in nontraditional activities that increase their systemic risk. Those activities include products and investments that expose insurers to risk from market movements; variable annuities that leave insurers vulnerable to "runs" if customers lose confidence; and other products and practices that make firms such as MetLife look more like banks and less like traditional insurers. Quantitative analysis of the insurance industry confirms that at least some insurers have become more systemically risky.

Insurers' roles as financial intermediaries also suggest that distress they experience can be transmitted elsewhere in the economy, such as through disturbances in the corporate bond market. Distress can be transmitted in many different ways. The Council should not be required (as MetLife has urged) to reduce that risk to an estimation of direct dollar losses to counterparties: such an approach would be impractical and miss important parts of the problem.

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III. The Council's specific findings concerning MetLife support its conclusion that MetLife engages in activities that increase systemic risk. The agency's findings are also consistent with quantitative analyses of MetLife's contribution to systemic risk based on market behavior and on *amici*'s measure of systemic risk using publicly available information.

IV. The Council should not be required to conduct a cost-benefit analysis of its designation of MetLife, and especially not required to use MetLife's incorrect measures of the costs of regulation. Cost-benefit analysis is a useful tool, but does not work where (as here) the benefits of regulation depend on events whose likelihood cannot be quantified. More importantly, MetLife's multi-billion-dollar estimate of the costs of regulation is based on the incorrect assumption that it is entitled to its current rate of return on risky investments. In fact, that rate incorporates an implicit subsidy that reflects a market perception that MetLife is too big to fail and that the government may intervene in the event of its distress. The loss of that subsidy is not a real cost.

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ARGUMENT

I. THE COUNCIL PROPERLY FOCUSED ITS ATTENTION ON METLIFE'S CONTRIBUTION TO SYSTEMIC RISK

A. Systemic Risk Is the Potential Effect of a Firm's Financial Distress on the Broader Economy

This case is about the Council's determination that "material financial distress at [MetLife], if it were to occur, could pose a threat to U.S. financial stability," JA749, so that MetLife would be supervised by the Federal Reserve's Board of Governors and required to meet enhanced prudential standards. From an economic policy perspective, the agency's determination is a means of managing systemic risk associated with MetLife's financial activities. To evaluate that determination, one should understand clearly the risk such regulation is addressing and the harm it is attempting to avert.

Systemic risk is often described as the "systemic[] importan[ce]" of a particular company; it is typically defined to exist "if the failure of the firm to meet its obligations to creditors and customers would have significant adverse consequences for the financial system and the broader economy."[2] That formulation highlights two important ideas. *First*, systemic risk describes the

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[2] Statement of Daniel K. Tarullo, Member, Board of Governors of the Federal Reserve System, at 4, Before the Sen. Comm. on Banking, Housing, and Urban Affairs, 111th Cong. (July 23, 2009), http://www.banking.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=a915ab53-be05-457e-8dc6-bf12d25d9d6f.

broader consequences of a firm's difficulty in performing financial services *when it cannot meet its obligations* – that is, when it falls short of capital. *Second*, systemic risk concerns the potential effect of a firm's distress on the broader economy. Those broader consequences justify regulatory measures to mitigate the risks a firm creates.

The general definition, although useful, is incomplete: it does not specify the conditions under which the distress[3] of an individual firm has significant adverse consequences for the financial system and the broader economy. In the view of *amici*, systemic risk arises only when there is an aggregate capital shortfall of the financial sector.[4] At such a time, aggregate financial intermediation – the ability of financial firms in the economy as a whole to obtain funds from depositors or investors, and finance other firms – can break down. If one financial firm cannot provide intermediation, but all others still have ready access to capital,

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[3] The definition above describes the situation in which systemic risk materializes as a firm's "failure to meet its obligations." The Council describes that situation as " 'material financial distress[,]' [which] exists when a nonbank financial company 'is in imminent danger of insolvency or defaulting on its financial obligations.' " JA752. *Amici* use the agency's term ("distress" rather than "failure") to avoid confusion. Terminology aside, the concept should include both formal bankruptcy and also regulatory intervention (forced mergers or rescues) when a firm can no longer function as a going concern.

[4] An aggregate capital shortfall of the financial sector occurs when the market value of the equity in the sector as a whole falls below a certain fraction of the market value of the assets of the sector as a whole. It can be described as financial firms generally being under stress.

those others can step into the breach. If capital is low in the aggregate, that is not possible. Troubles of one firm can then severely affect the economy.

An extreme example of such an event occurred in the fall of 2008 and winter of 2009. Much of the financial sector was then funded with fragile, short-term debt and suffered a common shock to its long-term assets, especially those related to real estate. Many financial firms began to experience distress, disrupting intermediation to households and corporations. Full-blown systemic risk emerged when, in the early fall of 2008, the market value of equity in Fannie Mae, Freddie Mac, Lehman Brothers, AIG, Merrill Lynch, Washington Mutual, Wachovia, and Citigroup, among others, went close to zero. Those firms were effectively insolvent and could no longer provide financial intermediation. Their distress created a contagious run on the financial system. Even solvent institutions could not access short-term funding.

The systemic importance of a firm comes not from its individual likelihood of distress, but from its contribution to the risk of a system-wide event. Systemic risk is about co-dependence, including factors such as:

- how much leverage a firm has when systemic risk is emerging elsewhere;

- whether the firm relies on short-term sources of liquidity or funding when other troubled firms rely on similar funding;

- whether the firm's assets are likely to be relatively correlated, so that they could all fall in value simultaneously under stress conditions;

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- whether other firms would likely be able to step in to provide the services provided by the firm if it were to fail (i.e., substitutability); and

- whether the firm's distress increases the likelihood of other firms' distress, or vice versa.

The importance of analyzing such interrelated factors has gained broad academic recognition.[5]

B.   Assessing the Likelihood That an Individual Firm Will Experience Distress Does Not Help To Manage Systemic Risk

Although the Council's analysis is statutory rather than purely economic, an understanding of systemic risk shows why the Council reasonably focused not on the current probability that MetLife will experience distress, but on the likely consequences *if* MetLife were to experience distress at a time of broader weakness in the financial sector. *See* Council Br. 26-29, 37-39; JA389-91. The district court

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[5] *See*, *e.g.*, Christian Brownlees & Robert Engle, *SRISK: A Conditional Capital Shortfall Index for Systematic Risk Assessment* (Jan. 2015), http://papers. ssrn.com/sol3/papers.cfm?abstract_id=1611229; Viral V. Acharya, Lasse H. Pederson, Thomas Philippon & Matthew Richardson, *Measuring Systemic Risk* (May 2010), http://ssrn.com/abstract=1573171; Tobias Adrian & Markus Brunnermeier, Federal Reserve Bank of New York, Staff Report No. 348, *CoVaR* (Sept. 2008; rev. Sept. 2014), http://www.newyorkfed.org/research/staff_reports/ sr348.pdf; Dimitrios Bisias, Mark Flood, Andrew W. Lo & Stavros Valavanis, Office of Financial Research, U.S. Dep't of the Treasury, Working Paper #0001, *A Survey of Systemic Risk Analytics* (Jan. 5, 2012), http://financialresearch.gov/ working-papers/files/OFRwp0001_BisiasFloodLoValavanis_ASurveyOfSystemic RiskAnalytics.pdf; Monica Billio, Mila Getmansky, Andrew W. Lo & Loriana Pelizzon, Dep't of Economics, Ca' Foscari University of Venice, Working Paper No. 21/WP/2011, *Econometric Measures of Connectedness and Systemic Risk in the Finance and Insurance Sectors* (Nov. 2011), http://www.argentumlux.org/ documents/billio_etal.pdf.

found that the Council acted arbitrarily by failing to explain why it departed from its previous approach, which that court believed "commit[ted]" the agency "to 'evaluat[ing] the . . . likelihood of material financial distress' at a target company." JA801 (first alteration added). *Amici* express no view on the legal question whether the Council adequately explained itself; but this Court should understand that such a commitment would make little sense as economic policy.

It is true that, in general, an economic analyst attempts to understand both the likelihood that an event will occur and the likely consequences of the event if it does occur. For systemic risk, that approach does not work. To see why, consider that a firm can conceivably experience distress in two ways: for idiosyncratic reasons (unrelated to the rest of the economy) or for systemic reasons (related to stress elsewhere in the economy).

Firms of MetLife's size rarely experience distress for idiosyncratic reasons; more importantly, distress for idiosyncratic reasons is not relevant to the Council's job. As explained above, if a single firm experiences distress when adequate financial intermediation is generally available, the system can handle the problem. Only distress when intermediation is unavailable can contribute to a systemic crisis. Thus, quantifying the likelihood of a firm's distress for idiosyncratic reasons is not useful.

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Quantifying the likelihood of a firm's distress for systemic reasons might be useful, but is not possible. Doing so would require knowing the likelihood that a systemic crisis will emerge during some particular future period – for example, in the next year. But if there were enough information to permit an observer to predict that a crisis would emerge next year, then that crisis would either be (1) avoidable, in which case market actors would avoid it; or (2) unavoidable, in which case market actors would immediately react and the crisis would occur now. All we can say in advance is that there is *some* risk of a systemic crisis (we know from history that such crises do occur). We cannot say how likely a crisis is at any given point or how one will likely occur.

Faced with this problem, the prudent approach is to focus on the consequences of extreme events while acknowledging one's inability to quantify those events' precise likelihood. That is the logic of stress tests: a regulator posits a possible bad scenario and seeks to understand its consequences. Doing so is difficult enough without also estimating just how likely the scenario is to occur. Focusing on the consequences of extreme events of unknown (but non-zero) probability is indeed the *only* way to regulate systemic risk. Any other approach leads to the conclusion that because we cannot reliably model future crises there is nothing we can do about them. *Amici* do not believe that conclusion is inevitable.

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II.   INSURERS SUCH AS METLIFE CAN BE IMPORTANT SOURCES OF SYSTEMIC RISK

Large insurers such as MetLife can contribute to systemic risk because they are vulnerable in times of market weakness and play a significant role as financial intermediaries. Those characteristics of large insurers are relatively new and result primarily from products and services distinct from traditional insurance activities. Economists continue to debate the significance of insurers' nontraditional activities and the ability of traditional insurance regulation to address them.[6] *Amici* believe that such activities contribute to systemic risk in ways not addressed by traditional regulation.[7] Those subsector-wide trends provide helpful context for the Council's determination to subject MetLife to "additional regulatory and supervisory tools focused on financial stability." JA775-76; *see also* Council Br. 16, 35-37.

A.   Modern Insurers Are Exposed to Significant Risk from Market Movements, Runs, and Macroeconomic Events

One useful way to consider the relative systemic risk of insurers is to compare them to banks. Banks have characteristics that make them systemically risky. Their assets tend to include loans and securities with values that correlate

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[6] For an argument that insurers are *not* systemically risky, see Scott E. Harrington, "Designation and Supervision of Insurance SIFIs," *in Modernizing Insurance Regulation* ch. 8 (John H. Biggs & Matthew P. Richardson eds., 2014).

[7] Insurers can also contribute to systemic risk through traditional activities. For example, they may be short of capital and hold risky investments that are held elsewhere in the system and are important for financial intermediation, such as corporate bonds and asset-backed securities. *See infra* pp. 20-23.

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to the performance of the economy (more borrowers default when times are hard). They tend to hold short-term liabilities (such as deposits that can be withdrawn on demand) that are more liquid than their assets (such as fixed-schedule loans or asset-backed securities). Banks are thus vulnerable to "runs" that occur when depositors or other creditors all withdraw funds at once.

Insurers traditionally have not been like banks. The underwriting risks of their claim liabilities usually are better diversified than are the credit risks of banks' loan assets. Traditional insurers typically lose liquidity through poor business decisions, not because of their business model.[8] Traditional insurers write insurance policies that require premiums to be received before claims are paid; have high policy-renewal rates; naturally link assets and liabilities; and often restrict policyholders from cashing out policies early. Insurers that issue only traditional policies are less vulnerable to runs and less systemically risky.

There are good reasons to think, however, that much of the insurance industry is no longer traditional (as *amici* use the term) and is now more systemically risky. One reason is a change in the policies insurers write. In the lead-up to the financial crisis, some large life insurers aggressively wrote investment-oriented life insurance policies with minimum guarantees and other

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[8] There are a few exceptions. For example, epidemics that kill many people in a short time are rare – the last significant one in the United States was the Spanish flu in 1918-1919 – but can devastate life insurers.

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features that exposed them to risk from market movements.[9] Another reason is

a change in insurers' investment mix. Recent studies suggest that life insurers'

holdings are sensitive to interest rates[10] and include exposures to mortgage-backed

securities.[11] Such investments expose insurers to risk based on the performance of

the economy.

The behavior of credit-default-swap premiums in the fall of 2008 strongly

suggests a market belief that large life insurers were exposed to risk from a

downturn in the economy. A credit-default-swap premium is the cost of protection

against default. Its increase reflects a market belief that default is more likely.

Figure 1 below compares the average credit-default-swap premium for the senior

subordinated debt of 20 large insurers[12] to average stock prices[13] from mid-2006

to late 2008. As the stock market collapsed in the fall of 2008, premiums rose

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[9] *See* Viral V. Acharya, John Biggs, Hanh Le, Matthew Richardson & Stephen Ryan, "Systemic Risk and the Regulation of Insurance Companies," *in Regulating Wall Street: The Dodd-Frank Act and the New Architecture of Global Finance* 241, 242 (Viral V. Acharya, Thomas F. Cooley, Matthew Richardson & Ingo Walter eds., 2010).

[10] *See* Elijah Brewer III, James M. Carson, Elyas Elyasiani, Iqbal Mansur & William L. Scott, *Interest Rate Risk and Equity Values of Life Insurance Companies: A GARCH-M Model*, 74 J. Risk & Ins. 401-23 (2007).

[11] *See* Etti G. Baranoff & Thomas W. Sager, *The Impact of Mortgage-Backed Securities on Capital Requirements of Life Insurers in the Financial Crisis of 2007-2008*, 34 Geneva Papers on Risk & Ins. 100-18 (2009).

[12] Figure 1 includes all insurers with market capitalization in excess of $5 billion and with credit-default swaps outstanding as of June 2007.

[13] Average stock prices are based on historical data from the Center for Research in Security Prices.

dramatically – well above 500 basis points, and briefly over 1000 basis points.

Those extraordinary premiums reflect market participants' belief that insurers were

at heightened risk of default.

FIGURE 1

CDS Spreads of the Insurance Sector
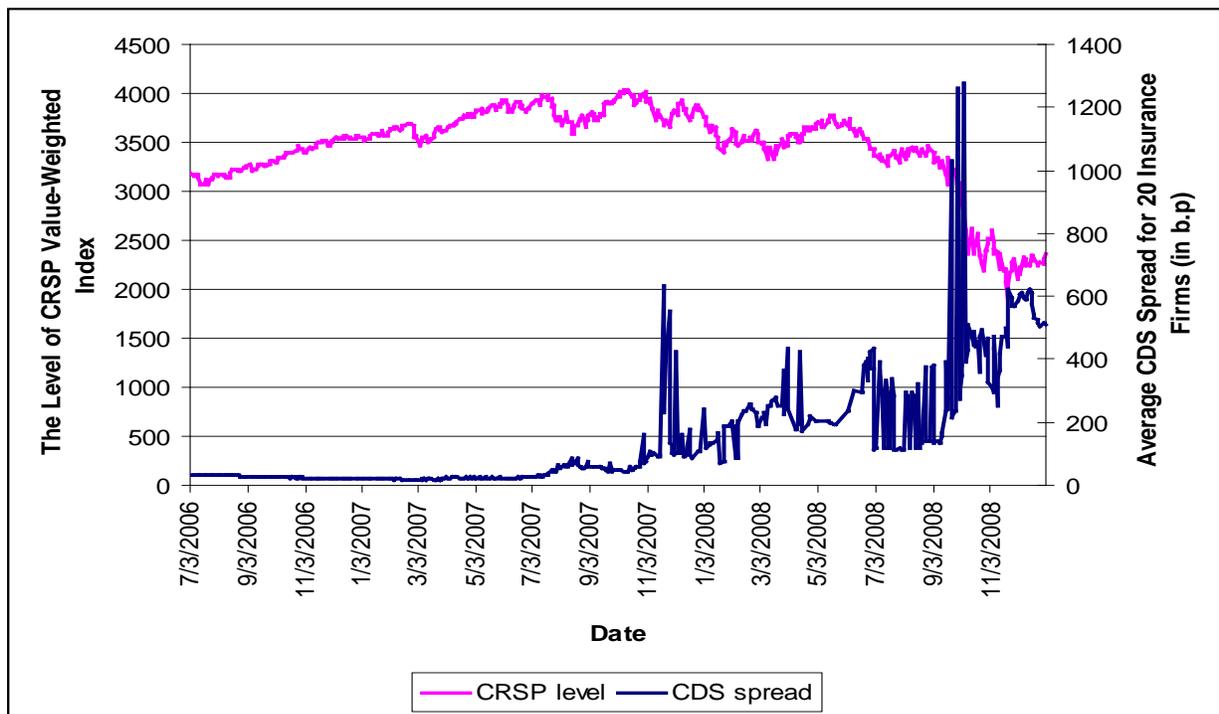
Further, insurers are now vulnerable to runs if policyholders lose confidence

in a particular insurer or in insurers generally. That vulnerability comes in part

from a rapid rise in the sale of variable annuities, which are purchased as

withdrawable investment accounts. A recent study finds that approximately 54%

of insurers' liabilities are moderately to highly liquid, estimating that 43% of

the life insurance industry's total general-account liabilities would likely be

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withdrawn under "extreme stress" and 31% under "moderate stress."[14] That could

limit insurers' ability to be financial intermediaries.

Other factors have also increased insurers' systemic risk. Insurers have

offered protection against loss from macroeconomic events, such as guarantees on

structured financial products tied to subprime mortgages; have become involved

in securities lending, a lightly regulated and risky form of shadow banking;[15] have

begun to use reinsurance to move liabilities to less-regulated jurisdictions;[16] and

have responded to reformed capital requirements by purchasing riskier mortgage-

backed securities.[17] These practices parallel the risk-seeking behavior of banks

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[14] *See* Anna Paulson, Thanases Plestis, Richard Rosen, Robert McMenamin & Zain Mohey-Deen, "Assessing the Vulnerability of the U.S. Life Insurance Industry," *in Modernizing Insurance Regulation* 61, 67-68 & tbl. 6.3 (John H. Biggs & Matthew P. Richardson eds., 2014); *see also id.* at 69-70 & tbl. 6.4 (explaining "extreme" and "moderate" scenarios).

[15] Shadow banking is a system of financial institutions that resemble banks, or transactions that resemble bank services, because they provide liquidity or maturity transformation services. Shadow banking typically involves borrowing short-term in rollover debt markets, using significant leverage, and lending to or investing in longer-term and illiquid assets.

[16] *See* Ralph S. J. Koijen & Motohiro Yogo, NBER Working Paper 19568, *Shadow Insurance* (Oct. 2013) (discussing transfers of liabilities to insurer-friendly U.S. states and offshore jurisdictions such as Bermuda and the Cayman Islands). Because liabilities stay within the insurer's holding company, the usual risk transfer between insurer and reinsurer does not occur. *See id.* at 2 (noting that such regulatory arbitrage grew from $11 billion to $364 billion from 2002 to 2012).

[17] *See* Bo Becker & Marcus Opp, NBER Working Paper 19257, *Regulatory Reform and Risk-Taking: Replacing Ratings* (July 2013).

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before the financial crisis and signal that traditional regulation can no longer

manage the full risk of large insurers' nontraditional behavior.

> **B.   Quantitative Analysis Further Supports the Conclusion that Insurers Are Relatively Systemically Risky**

NYU Stern's Systemic Risk Rankings published by NYU's Volatility

Institute – with which some *amici* are affiliated – provide estimates of the expected

capital shortfall of global financial firms under stress conditions.[18] The Systemic

Risk Rankings attempt to answer the question: *How much capital would a financial*

institution need to raise in order to function normally under stress conditions?

That amount (referred to as "SRISK") should approximately equal the extent to

which a firm's market value of equity falls below a fraction of that firm's total

assets.[19] The SRISK measurement is like regulatory stress tests: both try to estimate

the amount of capital required to ensure that a firm can not only survive, but also

continue to intermediate and provide financial services to the real economy.

Although SRISK is not part of the statutory standard that the Council is required

to apply, *amici* consider it useful to describe and illustrate systemic risk.[20]

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[18] *See* http://vlab.stern.nyu.edu/welcome/risk/.

[19] The Appendix to this brief provides the SRISK formula. SRISK is a function of a firm's size (total assets), its assets-to-equity ratio (its "leverage"), and its risk (equity losses under certain stress conditions).

[20] The academic literature uses SRISK as one of the benchmark measures of systemic risk. *See*, *e.g.*, Christian Brownlees, Ben Chabot, Eric Ghysels & Christopher Kurz, Federal Reserve, Working Paper, *Back to the Future: Backtesting*

Figure 2 below shows the insurance subsector's percentage of the U.S. financial sector's total quasi market value ("QMV") of assets and total SRISK from 2003 to 2013. Before the crisis, both shares were approximately 20%: the insurance subsector's SRISK was commensurate with its share of total assets. During the crisis, the insurance subsector's share of SRISK was less, reaching a low of 10%. That suggests that – despite insurers' nontraditional behavior and the high-profile role of insurers such as AIG – insurers overall played a small role in the crisis compared to banks. Since the crisis, whether due to regulation or voluntary risk reduction, the banking subsector has become better capitalized and less risky relative to the insurance subsector. At present, the insurance subsector's contribution to overall systemic risk is generally between 25% and 30%, well above its fairly steady 22-23% share of overall assets.

Systemic Risk Measures During the Great Depression and Historical Bank Runs (Mar. 2015); J. David Cummins & Mary A. Weiss, "Systemic Risk and Regulation of the U.S. Insurance Industry," *in Modernizing Insurance Regulation* ch. 7 ("Cummins & Weiss, *in Modernizing Insurance Regulation*"); Markus K. Brunnermeier, Gang Dong & Darius Palia, Working Paper, Princeton University, *Banks' Non-Interest Income and Systemic Risk* (Jan. 2012), http://scholar.princeton.edu/sites/default/ files/paper_2012_01_31_0.pdf; Linda Allen, Turan G. Bali & Yi Tang, *Does Systemic Risk in the Financial Sector Predict Future Economic Downturns?*, 25 Rev. Fin. Stud. 3000 (2012).

FIGURE 2

Relative Systemic Risk of the Insurance Sector
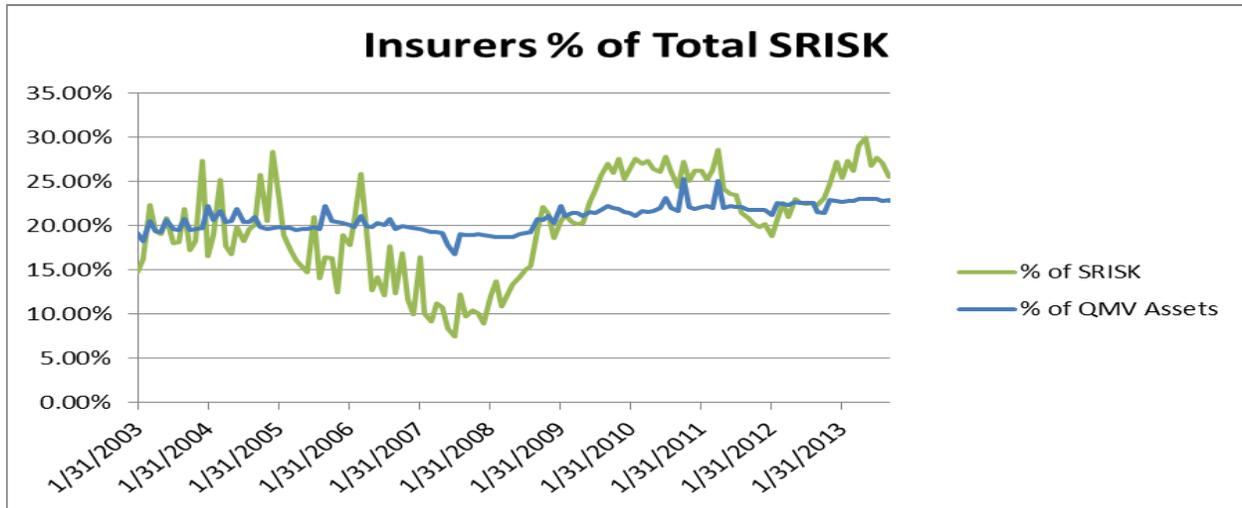
A recent study finds that nontraditional insurance activities correlate to higher

SRISK,[21] supporting the argument that such activities increase systemic risk.

C.   Insurers Can Transmit Risk to Other Parts of the Economy

There are a number of scenarios in which insurers could help cause a

shortfall of capital in the economy. As examples, (1) if insurers have low capital

but are exposed to market risks, a large shock to the economy could trigger a

shortfall; (2) if insurers and other financial firms are exposed to a highly interconnected

firm (like AIG before the crisis), that firm's distress could trigger a shortfall; (3) if

a large insurer's assets are liquidated at fire-sale prices, that could cause problems

at other firms (including other insurers); or (4) a run on one insurer could lead to a

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[21] *See* Cummins & Weiss, *in Modernizing Insurance Regulation* at 110-21, 126-28.

general loss of policyholder confidence that triggers runs on others. Such scenarios

could occur alone or together.[22] The second, third, and fourth ones could damage

even an insurer that previously appeared healthy, reinforcing the conclusion that

the Council should not need to assess the likelihood that a particular firm will

experience distress. *See supra* Part I.B.

The distress of insurers could also harm the real (nonfinancial) economy.

Life insurers are among the largest investors in the U.S. capital markets. The

American Council of Life Insurers ("ACLI") estimates that, at the end of 2014, life

insurers held $5.8 trillion in total assets; were "a major source of bond financing

for American business, holding 20% of all U.S. corporate bonds"; and "financ[ed]

more than $386 billion, or one-eighth, of U.S. commercial mortgages."[23] A threat

to so much financing contributes to systemic risk.

Fire sales of corporate bonds (causing bond prices to fall sharply) present an

even greater risk. Distress in the insurance subsector could make it prohibitively

expensive for even AA-rated and AAA-rated firms to issue corporate bonds. There

is evidence that the liquidity of the corporate bond market dropped during the

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[22] The second and third scenarios resemble the "exposure transmission channel," JA437-503, and "asset liquidation transmission channel," JA504-88, described by the Council; the fourth one bears similarities to the "contagion" scenario that is a subcategory of exposure transmission, JA497-503.

[23] ACLI, *Assets and Investments in America's Economy*, https://www.acli. com/Tools/Industry%20Facts/Assets%20and%20Investments/Pages/Default.aspx.

financial crisis in 2008.[24] Trouble in the corporate bond market could also spread

to the banking subsector. Firms unable to issue bonds would likely draw down on

their bank lines of credit as a last resort. Healthier banks might be able to meet

such sudden drawdowns, but weaker ones could experience distress.[25]

It is an open question what role insurers played in the corporate bond market

in the fall of 2008. More research is important. Nevertheless, the impact of the

insurance sector's inability to participate in the corporate bond market is well

documented.[26] Such effects would likely be even stronger if insurers were distressed,

there were a wave of downgrades, and banks were also in severe distress – a

scenario that deserves the title of "systemic risk."[27]

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[24] *See* Jens Dick-Nielsen, Peter Feldhutter & David Lando, *Corporate Bond Liquidity Before and After the Onset of the Subprime Crisis*, 103 J. Fin. Econ. 471-92 (2012).

[25] *See*, *e.g.*, Viral Acharya, Heitor Almeida, Filippo Ippolito & Ander Perez, *Credit Lines as Monitored Liquidity Insurance: Theory and Evidence*, 112 J. Fin. Econ. 287 (2014); Victoria Ivashina & David Scharfstein, *Bank Lending During the Financial Crisis of 2008*, 97 J. Fin. Econ. 319 (2010).

[26] *See* Andrew Ellul, Chotibhak Jotikasthira & Christian T. Lundblad, *Regulatory Pressure and Fire Sales in the Corporate Bond Market*, 101 J. Fin. Econ. 596-620 (2011) (when insurers are required by regulation to sell downgraded corporate bonds, the prices of those bonds decline).

[27] Negative effects on the real economy could also result from insurers' unwillingness or inability to supply insurance. There is growing evidence that capital-constrained financial firms, including insurers, may reduce the supply of capital in the face of losses. *See*, *e.g.*, Kenneth A. Froot, *The Market for Catastrophe Risk: A Clinical Examination*, 60 J. Fin. Econ. 529-71 (2001); Mark J. Garmaise & Tobias J. Moskowitz, *Catastrophe Risk and Credit Markets*, 64 J. Fin. 657-707 (2009). It is not yet clear whether such supply shocks extend beyond catastrophe insurance.

The Council has appropriately stressed the role of its "expert judgment," Council Br. 49, in carrying out the "highly technical analysis," *id.* at 23, required for its task. The consequences of MetLife's distress are difficult to predict, and trying to do so requires judgment. Based on the available evidence, *amici* believe the Council's concerns – including a "forced liquidation" of MetLife's "substantial holdings of . . . fixed-income corporate" and asset-backed securities could lead to "severe disruptions" in "[m]arkets for these relatively illiquid assets," JA508 – are legitimate.

D. Quantification of the Effects of MetLife's Distress on Its Counterparties Should Not Be Required

One of MetLife's criticisms of the Council – adopted by the district court – was that the agency failed to establish "that MetLife's material financial distress would 'materially impair' MetLife counterparties" because it did not project "'estimated losses'" to counterparties. JA802-03. As with its conclusion that the Council had to quantify the risk of MetLife's distress, the district court framed this as an unexplained departure from previous policy. *Amici* again express no view on that legal question. Nevertheless, the court's reasoning raises the important question whether, to establish a threat to financial stability, the Council should have to show that MetLife's distress would cause enough estimated dollar losses to counterparties to put them directly in distress? *Amici* agree with the Council, *see* Br. 45-50, that it should not.

First, the agency would need to look not at absolute losses to counterparties, but at losses relative to their health in the relevant scenario. Because MetLife's distress matters only in an extreme scenario, *see supra* Part I, its counterparties will also be weaker than usual. The Council would need to model the capital position in a hypothetical stress situation not only of MetLife, but also of all its major counterparties. For research economists like *amici*, that problem would be interesting and difficult. For a working regulatory agency, it would be an unrealistic burden.

Second, in focusing on direct dollar losses to counterparties, the agency would be concentrating on only one channel for systemic risk. Several scenarios in which an insurer's distress can spread risk, such as fire-sale liquidation of its assets or a subsector- or sector-wide loss of confidence, *see supra* Part II.C, do not involve such direct dollar losses.

Third, in maintaining such a focus the agency would be ignoring the critical issue of exposure uncertainty. During a crisis, systemic risk spreads not only through actual counterparty exposures, but also through uncertainty about and perception of exposures. Before the recent crisis, a regulator would have been hard-pressed to identify the relevant exposures; yet those exposures (or uncertainty about them) became critical. That is a reason to assess risk based on gross positions and other simple metrics, as opposed to estimating losses by netting out collateral and expected recovery. The latter approach may produce a figure that appears

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more precise, but underestimates the risk that market actors will perceive in

a crisis.

III. METLIFE'S CHARACTERISTICS SUGGEST IT IS A SOURCE OF SYSTEMIC RISK

Bearing in mind the ways in which nontraditional insurance contributes to

systemic risk, the Council's determination that MetLife is systemically risky is

unsurprising.[28] Several of the agency's findings confirm that MetLife engages

in activities that increase systemic risk.

First, MetLife uses funding agreements and related products, including

funding-agreement-backed notes and commercial paper. *See* JA756-77, 768

(as of September 2014, about $52.3 billion of outstanding funding agreements

and approximately $35 billion of notes and commercial paper); *see also* JA411-15.

It also engages in extensive securities lending. *See* JA757-58 (as of September

2014, MetLife was liable for cash collateral of about $30 billion in connection

with securities lending). Those activities are not traditional insurance. Funding-

agreement-backed commercial paper and securities lending are shadow-banking

activities that contribute to systemic risk. *See supra* p. 17 & n.15.

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[28] Before the Dodd-Frank Act, some of *amici* co-authored an article that identified MetLife as the second-most systemically risky insurer (after AIG itself) in the country as of 2007. *See* Viral V. Acharya, John Biggs, Matthew Richardson & Stephen Ryan, *On the Financial Regulation of Insurance Companies* 13, 40 & tbl. 5 (Aug. 2009), http://web-docs.stern.nyu.edu/salomon/docs/whitepaper.pdf.

Second, MetLife issues guaranteed investment contracts, including traditional and separate-account contracts. *See* JA758-59 (as of December 31, 2013, about $6 billion of outstanding traditional guaranteed investment contracts and $42 billion of "separate account liabilities with guarantees, some of which are separate account [contracts]"); *see also* JA419-23. Unless hedged, such contracts expose MetLife to risk from market downturns. *See supra* p. 17.

Third, MetLife writes variable annuities. *See* JA760-61 (as of September 30, 2014, approximately $100 billion); *see also* JA429-31. Those annuities can expose it to market risk (subject to hedging) and redemption risk (potential runs). *See supra* pp. 16-17.

Fourth, partly as a hedge against variable-annuity guarantees, MetLife holds derivatives. *See* JA766 (as of September 30, 2014, more than $400 billion); *see also* JA482 (derivatives exposure significantly greater than other large insurers). Hedging reduces MetLife's market risk, but increases its interconnection to the financial sector and counterparty risk.

Fifth, "of the $308 billion in general account liabilities of MetLife's U.S. insurance operating companies," the Council reports that "approximately $49 billion may be withdrawn with little or no penalty." JA769; *see also* JA367-68, 377. That creates the potential for a run.

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The Council also reports that MetLife's largest category of assets is

U.S. corporate fixed income securities: "over four days of average daily trading

volume." JA771; *see also* JA549 (as of December 31, 2013, approximately $106.5

billion of U.S. corporate debt). Those holdings expose MetLife to market risk

(the securities could default) and liquidity risk (MetLife, under stress, could not

sell instantaneously at market price). MetLife also holds "over 12 days" of average

daily trading volume in asset-backed securities. JA771; *see also* JA549 (as of

December 31, 2013, approximately $15.6 billion). To liquidate those, MetLife

would almost certainly need to sell at fire-sale prices. *See supra* pp. 20-22.

To corroborate the agency's analysis, *amici* have also examined the credit-

default-swap premium for MetLife's five-year unsecured debt (which represents

the market's perception of MetLife's distress, *see supra* pp. 15-16). Figure 3

shows that, from September 30, 2008, through June 1, 2009, the spread never fell

below 400 basis points. By comparison, over the last 20 years, the median spread

of high-yield (so-called junk) bonds has been 560 basis points. One can infer that

MetLife's credit was under considerable pressure during the crisis. Figure 3 also

graphs the SRISK of the U.S. financial sector, which tracks MetLife's premiums.

Thus, MetLife's financial distress is high when the estimate of aggregate capital

shortfall is high – a sign of systemic risk.

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FIGURE 3

CDS Premiums of MetLife
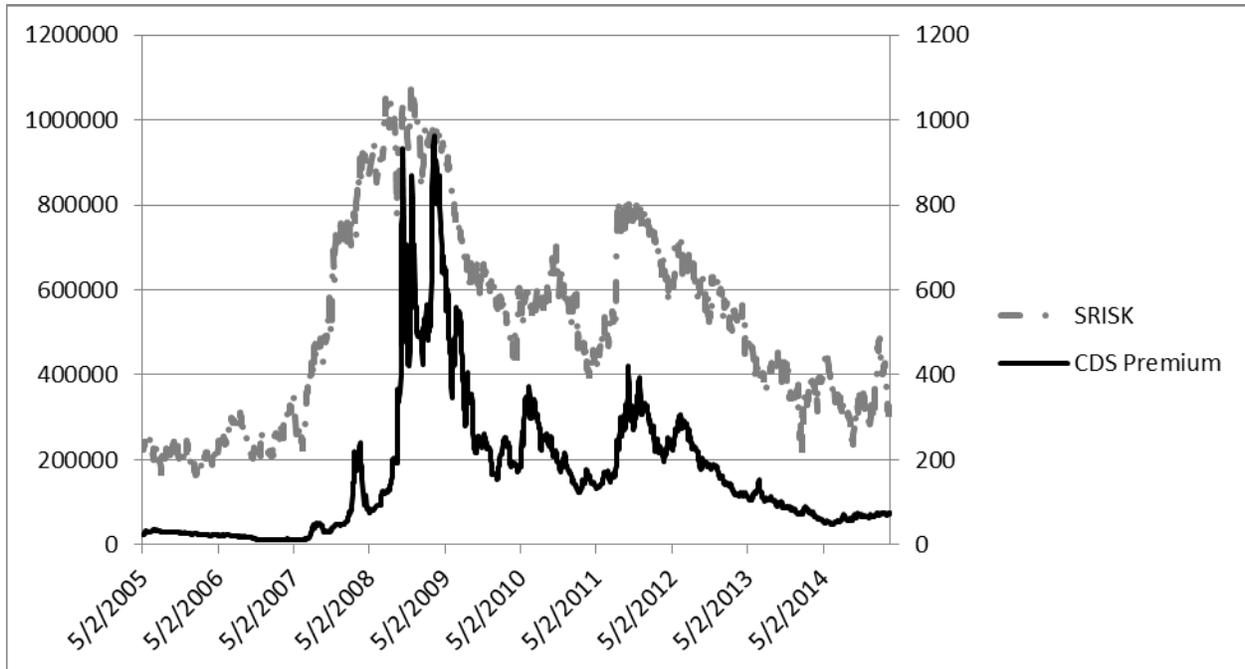
Amici have also estimated MetLife's systemic risk using the SRISK measure

itself, comparing MetLife to other large publicly traded life insurers: Prudential of

America and Lincoln National. Figure 4 shows that the SRISKs of MetLife and

Prudential track closely (far exceeding that of Lincoln National) and jumped

during the financial crisis. Since then, aggregate SRISK has declined (*see*

Figure 3), but the SRISKs of MetLife and Prudential, if anything, have increased.

FIGURE 4

SRISK of Life Insurance Companies
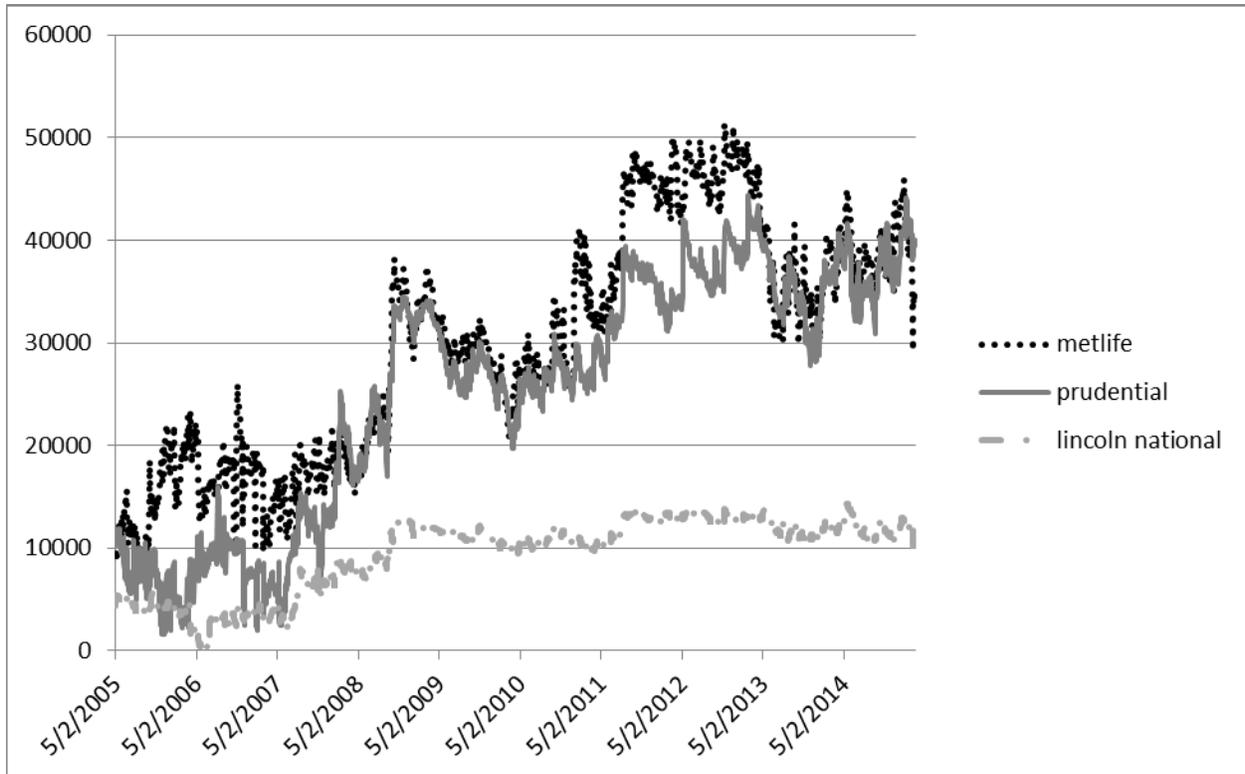
As another benchmark, Table 1 below reports the 10 highest SRISKs across

all U.S. financial firms. MetLife ranks fifth with an SRISK of $30.35 billion.

Its SRISK is similar to that of the fourth-ranked firm (Citigroup, $32.36 billion)

and higher than that of the sixth-ranked firm (Morgan Stanley, $20.07 billion).

Since 2013, MetLife and Prudential have had SRISK values in the top 6 of all

U.S. financial firms.

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TABLE 1

SRISK of U.S. Financial Companies (May 14, 2015)

Institution	Ranking	SRISK ($ billions)	MES[29] (%)
Bank of America Corp.	1	43.85	2.19
JP Morgan Chase & Co.	2	39.11	2.33
Prudential Financial Inc.	3	34.40	2.19
Citigroup Inc.	4	32.36	2.51
MetLife Inc.	5	30.35	2.12
Morgan Stanley	6	20.07	2.99
Goldman Sachs Group Inc.	7	14.50	2.93
Lincoln National Corp.	8	10.80	2.92
Principal Financial Group Inc.	9	8.54	2.86
Hartford Financial Services Group Inc.	10	7.76	2.49

The graphs and table set forth above are purely quantitative. They do not reflect the qualitative statutory factors the Council must consider. It is nevertheless telling that these measures strongly support the agency's conclusion.

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[29] "MES," or Marginal Expected Shortfall, is defined in the Appendix.

IV.   THE COUNCIL SHOULD NOT BE REQUIRED TO CONDUCT AN ANALYSIS USING METLIFE'S COST ESTIMATES

Finally, this Court should reject MetLife's argument, accepted by the district court, that the Council was statutorily required to consider " 'billions of dollars' of regulatory costs" that its designation would allegedly impose on MetLife. JA806 (quoting JA83 (¶ 132)). Although *amici*, as economists, believe that cost-benefit analysis is generally a useful policy tool, the analysis that the district court envisioned is misconceived in two ways.

First, a full cost-benefit analysis of a proposed regulation requires estimating benefits as well as costs. Doing so calls for an estimate of the magnitude of the harm the regulation seeks to avert and the reduction in the probability of that harm from regulation. Estimating those benefits here would require the Council to quantify the likelihood of a systemic event. As explained above, that cannot be done. *See supra* pp. 11-12.

Second, the billion-dollar costs put forth by MetLife are not real costs. The real costs of regulation here are the costs of hiring more lawyers and accountants to comply. Those do not plausibly approach billions of dollars. MetLife's figure instead is speculation about a "reduction in its return on investment" if it continues with all its current risky activities while complying with anticipated requirements such as "higher capital requirements than most of its principal competitors."

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JA82-83 (¶ 132). Treating that reduction as a cost overlooks the reason that

MetLife's current returns are inflated: it is too big to fail.[30]

The market knows that MetLife is systemically risky, as shown by MetLife's

credit-default-swap premiums. But MetLife is not required to bear the risk of the

costs that its distress would impose on the financial system. Instead, it benefits from

being able to take risks that are borne by the rest of the economy, aided by the

perception (priced into all of MetLife's transactions) that government intervention

may be likely if needed to prevent another crisis. Regulations (such as higher

capital requirements) that force MetLife to reduce its systemic risk can ensure that

MetLife must bear the full cost of the risk it imposes on others. If MetLife then

earns a reduced return on its investments, that is not a cost: it is a return to normal

conditions. MetLife's arguments and the district court's reasoning ignore that

important point.

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[30] "Too big to fail" is an oversimplification: the problem is that, because of MetLife's interconnection and complexity (not just its size), the market perceives that government intervention may be likely in the event that MetLife experiences distress. *Amici* use the phrase as shorthand.

CONCLUSION

For the reasons stated above, *amici* support the Council's position and

respectfully urge this Court to reverse the decision of the district court.

Respectfully submitted,

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June 23, 2016

CERTIFICATE OF COMPLIANCE

Pursuant to Federal Rule of Appellate Procedure 32(a)(7)(C) and D.C. Circuit Rule 32(a), the undersigned certifies that this brief complies with the applicable type-volume limitations. This brief was prepared using a proportionally spaced type (Times New Roman, 14 point). Exclusive of the portions exempted by Federal Rule of Appellate Procedure 32(a)(7)(B)(iii) and D.C. Circuit Rule 32(e)(1), this brief contains 6,979 words. This certificate was prepared in reliance on the word-count function of the word-processing system (Microsoft Office Word 2013) used to prepare this brief.

   /s/ *Gregory G. Rapawy*
   Gregory G. Rapawy

June 23, 2016

CERTIFICATE OF SERVICE

I hereby certify that, on this 23rd day of June 2016, I electronically filed the

foregoing with the Clerk of the Court for the United States Court of Appeals for

the D.C. Circuit by using the appellate CM/ECF system. I further certify that all

participants in the case are registered CM/ECF users and will be served by the

appellate CM/ECF system.

　　　　　　　　　　　　　　　　　 /s/ *Gregory G. Rapawy*
　　　　　　　　　　　　　　　　　Gregory G. Rapawy

APPENDIX

$$SRISK_{it} = E_t\left(Capital\ \text{Shortfall}_i\middle|Crisis\right)$$
$$= E_t\left(k\left(Debt_{it+n} + Equity_{it+n}\right) - Equity_{it+n}\middle|Crisis_{t+n}\right)$$
$$\approx \left[k\frac{Debt_{i,t}}{Assets_{i,t}} - (1-k)\left(1 - LRMES_{i,t}\right)\frac{Equity_{i,t}}{Assets_{i,t}}\right]Assets_{i,t} \qquad (1)$$

To define the terms in this chart:

$Debt_{it}$ is the book value of debt for firm i at time t

$Equity_{it}$ is the market value of equity for firm i at time t

$Assets_{i,t}$ is the quasi market-value of assets of firm i at time t (i.e., its market value of equity plus book value debt)

k is a prudential level of equity relative to assets[*]

$LRMES_{i,t}$ is the long-run marginal expected shortfall, i.e., the decline in equity values to be expected under specified financial stress conditions, calibrated to $MES_{i,t}$.

MES is the marginal expected shortfall associated with a market decline of at least c. The MES is computed by setting the value of the daily threshold equal to -2 percent, which corresponds approximately to the 5 percent quantile of the empirical unconditional market return distribution. This quantity is defined as:

$$MES_{it} = E_t\left[r_{it+1}\middle|r_{mt+1} \le c\right]$$

where r_{it} and r_{mt} are the returns on the firm and market, respectively.

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[*] We choose a level of k equal to 8 percent of total assets and, importantly, we assume that this k is the same across firms, whether or not they are banks. While this is true, it is not clear whether k should be higher or lower for insurance companies. In practice, one could use varying k across different types of financial firms that would then aggregate to a weighted average of these k at the financial sector level.

We can estimate this measure econometrically using market data on equities and balance sheet data on liabilities. The advantage of this formula for a firm's systemic risk is that it is precise in nature. The measure of a firm's expected capital shortfall in a stress situation provides regulators with a quantifiable measure of the relative importance of a firm's contribution to overall systemic risk. The measure also captures in one fell swoop many of the characteristics considered important for systemic risk such as size and leverage.