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IMPACT ON NEW YORK STATE OF TAXING REINSURANCE TRANSACTIONS

Lars Powell, Ian Adams and R.J. Lehmann

EXECUTIVE SUMMARY

The enormous devastation caused by Hurricane Harvey, still being tallied at the time this paper went to press, has prompted renewed public discussion of appropriate policies to prepare for and finance the recovery from major disasters.[1] Such conversations arrive at a fortuitous time, as Congress also is set to consider a major restructuring of the U.S. tax code for the first time in more than 30 years.

While the precise contours of congressional tax-reform efforts are yet to be determined, potential changes to the taxation of cross-border reinsurance transactions—such as through the use of a territorial tax, a discriminatory tax on insurance affiliates or a full or partial border-adjustment tax—would affect insurers' ability to use reinsurance to spread risk globally. Hurricane Harvey offers evidence of the folly of such an approach, as early estimates suggest as much as half of the insured cost of Harvey's damages could fall to global reinsurance companies.[2]

This paper, continuing a series of R Street Institute publications that examine the impact of such tax schemes on local U.S. insurance markets,[3] finds the impact to consumers within New York State of taxing cross-border reinsurance transactions would be an additional $1.21 billion in higher property-casualty insurance premiums over the next decade. This projection is derived by examining the impact that discriminatory tax treatment of cross-border reinsurance transactions would have on the supply of international reinsurance, and calculating the effects that subsequent changes in price and availability would have on insurance markets and policyholders. Because property and casualty insurers that do business in New York State—as in other states and regions exposed to major natural disasters—cede a large volume of risks to foreign reinsurers, these states would experience dramatically higher insurance premiums under tax systems

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1. R.J. Lehmann, "CBO's NFIP report makes clear how we encourage people to live at the coast," *Insurance Journal*, Sept. 4, 2017. http://www.insurancejournal.com/blogs/right-street/2017/09/03/463213.htm

2. Luke Gallin, "50% of potential Harvey insured loss expected to be covered by reinsurance: J.P. Morgan," *Reinsurance News*, Aug. 25, 2017. https://www.reinsurancene.ws/50-potential-harvey-insured-loss-expected-covered-reinsurance-j-p-morgan/

3. See the R Street Institute publications: Lars Powell, Ian Adams and R.J. Lehmann, "Impact of a border-adjustment tax on the Texas insurance market," April 2017. http://www.rstreet.org/wp-content/uploads/2017/04/93.pdf; Powell, Adams and Lehmann "Impact of a border-adjustment tax on the Louisiana insurance market," May 2017. http://www.rstreet.org/wp-content/uploads/2017/05/94.pdf; Powell, Adams and Lehmann "Impact of a border-adjustment tax on the North Carolina insurance market," May 2017. http://www.rstreet.org/wp-content/uploads/2017/05/95.pdf; Powell, Adams and Lehmann "Impact of a border-adjustment tax on the California insurance market," July 2017. http://www.rstreet.org/policy-study/impact-of-a-border-adjustment-tax-on-the-california-insurance-market/.

that disallow deductions for cross-border reinsurance transactions. Such changes to the tax could would therefore disproportionately harm consumers' ability to secure insurance coverage for their homes, cars and businesses.

This is of particular concern in New York, where residents are exposed to hurricane, severe storm and flood risk and have even recently suffered significantly at the hands of Hurricanes Sandy ($9.6 billion in insured losses in New York alone) and Irene.[4] In fact, based on property losses, three of the costliest hurricanes in U.S. history afflicted New York (Ivan, Frances and Sandy).[5] The less that private property owners insure their own risk, the more it will be shunted onto the backs of taxpayers.

As Congress prepares to consider structural changes to the U.S. tax code, proposals that target international reinsurance would have adverse consequences on New York's ability to obtain coverage affordably.

TAX REFORM AND REINSURANCE

More than 30 years after Congress last passed a major overhaul of the U.S. tax code, comprehensive tax reform is back on the agenda, thanks to unified Republican control of the White House and both chambers of Congress. However, Republicans' narrow two-vote edge in the U.S. Senate serves to constrain the sorts of permanent changes they would be able to make on a strictly party-line vote.

Under existing law, domestic insurance companies may deduct the cost of reinsurance—whether from a foreign or domestic source, and whether underwritten by an affiliated or unaffiliated reinsurer—as a legitimate business expense. As covered more fully in the next section, reinsurance is the primary tool that insurers—particularly property and casualty insurers—use to manage their exposure to catastrophically large risks.

To counter the possibility that reinsurance transactions may be used for "income stripping" purposes, premiums ceded to jurisdictions deemed by the Treasury Department to be "tax exempt countries" are subject to a 4 percent federal excise tax for insurance premiums and a 1 percent excise tax for reinsurance premiums. In addition, both the Internal Revenue Service and state insurance commissioners have authority to unwind reinsurance transactions judged not to constitute legitimate risk transfers.

Despite these existing protections to combat any potential

for base erosion, members of Congress have considered changes that would affect the cross-border flow of reinsurance through a shift to one of several kinds of territorial-based tax systems. Most notably, Republican leadership in the U.S. House were known to have favored a move to a border-adjustment tax, which would eliminate taxes on foreign income earned by U.S. companies, while simultaneously removing U.S. firms' ability to deduct the costs of goods and services sourced from abroad, including the cost of reinsurance procured from reinsurers outside U.S. tax jurisdiction. However, in late July, leaders of the U.S. House, Senate, Treasury and the National Economic Council announced jointly that they "have decided to set this policy aside in order to advance tax reform."[6]

Nonetheless, Congress still may consider other measures within the context of tax reform that would make it more difficult for domestic insurers to cede reinsurance internationally. In several recent sessions of Congress, legislation has been introduced that would limit domestic insurers' ability to expense the cost of reinsurance ceded to offshore affiliates.[7] Analysis by the Brattle Group of that legislation—which has been sponsored by Rep. Richard Neal, D-Mass., the ranking Democratic member of the House Ways and Means Committee, the chief tax-writing panel in Congress—finds the effects in New York would be to raise the annual cost of homeowners insurance by $14.8 million, the annual cost of commercial multiperil insurance by $29.3 million and the annual cost of workers' compensation by $54.8 million.[8]

Should Congress any sort of territorial system that makes it more difficult to purchase reinsurance from abroad, the effects would be felt most significantly in states like New York, which have significant exposure to natural catastrophes.

THE GLOBAL REINSURANCE MARKET

The property and casualty insurance sector—which includes companies that offer coverage for homes, businesses, vehicles and a variety of liability exposures—wrote $612.27 billion of direct premium in the United States in 2016, including $44.96 billion of premium in New York State alone, according to data provided by S&P Global Market Intelligence.[9]

4. Department of Commerce, "Economic Impact of Hurricane Sandy," July 16, 2017. https://www.esa.gov/sites/default/files/sandyfinal101713.pdf

5. Insurance Information Institute, "New York Hurricane Insurance Fact File," July 16, 2017. http://www.iii.org/article/new-york-hurricane-insurance-fact-file

6. Office of the Press Secretary, "Joint Statement on Tax Reform," The White House, July 27, 2017.

7. U.S. Sen. Mark Warner, "Sen. Warner, Rep. Neal Introduce Legislation to Close Foreign Reinsurance Tax Loophole," Sept. 28, 2016. http://www.warner.senate.gov/public/index.cfm/pressreleases?ContentRecord_id=03D45963-9516-48EE-841A-142049D8FA4A

8. Michael Cragg, Jehan deFonseka, Lawrence Powell and Bin Zhou, "The Impact of Offshore Affiliate Reinsurance Tax Proposals on the U.S. Insurance Market: An Updated Economic Analysis," The Brattle Group, Jan. 23, 2017. http://www.brattle.com/system/news/pdfs/000/001/172/original/Brattle_Impact_Study_2017.pdf?1485188542

9. SNL Financial P&C Insurance Market Share Application, accessed Sept. 4, 2017. http://www.snl.com

Consumers are probably most familiar with "personal lines" insurers who use jingles and quirky ads to market home and auto policies: Allstate, Nationwide, Geico, Progressive, Farmers and so on. Some may also be familiar with the largest writers of commercial business insurance, names like Chubb, Zurich, Liberty Mutual and American International Group Inc. But in addition to these "primary" insurers, a crucial role in all insurance markets is played by lesser-known firms who offer reinsurance, often characterized as "insurance for insurance companies."

There are any number of reasons why insurers purchase reinsurance, but the two primary motivations are to protect against one or more very large individual losses ("catastrophes") or to better manage the fluctuation of claims costs around the expected long-term mean. By limiting insurers' exposure to extreme loss scenarios, reinsurance allows insurers to deploy more capacity overall and to accumulate expertise in particular market niches—serving a specific geography, line of business or class of insured—with less concern that such concentrations will pose a threat to solvency.

Because they specialize in very large risks, reinsurers must operate on a global basis, deploying capital around the world in ways that allow them to diversify their exposure among uncorrelated risks. For example, a reinsurer can take on the risk of very large earthquakes in Japan, hurricanes in Florida, floods in Australia, terrorist events in France and cyberattacks in the United Kingdom, relatively secure in the knowledge that it is unlikely to experience all of these in the same year. (For those rare cases where that does occur, there also is a market for "retrocessional" cover, or reinsurance for reinsurance companies.)

According to S&P Global Market Intelligence data, the U.S. property and casualty insurance industry on an annual basis cedes about 20 percent of its direct written premiums to reinsurers. Though the United States is itself home to a handful of large reinsurers, each of whom also writes significant coverage abroad, the domestic P&C insurance industry historically purchases more than half of its reinsurance from foreign reinsurers (both affiliated and unaffiliated) and fully half the world's demand for reinsurance comes from the United States.[10]

In the context of this global capital market, erecting barriers to the free flow of reinsurance across national borders—as would be the case under a border-adjustment tax or a tax on offshore reinsurance affiliates—inevitably would result in making primary insurance products more expensive or, in some cases, completely unavailable. As editor R.L. Carter described the industry in his preface to the seminal 1983 textbook *Reinsurance*:

The layman can be excused for regarding insurance as a mystery but many insurance practitioners themselves view reinsurance in a similar light. Yet without reinsurance many classes of insurance could not be conducted on their present-day scale, or at least any attempt to do so would seriously undermine the degree of security insurers can provide for policyholders. The mobilization of underwriting capacity on an international scale is necessary to provide the amount of insurance cover required for many of today's very large industrial and transport risks, and the world-wide spreading of catastrophe losses, especially those caused by natural disasters, contributes to international economic stability.[11]

CATASTROPHE RISK IN THE UNITED STATES AND NEW YORK

The United States faces a host of disaster risks, both natural and manmade. Emerging threats from catastrophic terrorism and cyberattacks pose risks that are potentially ruinous, but difficult to quantify for either frequency or severity.

Floods are the most common and costly natural disasters,[12] but the overwhelming bulk of flood risk is borne by the federally administered National Flood Insurance Program. Due to insufficient insurance premiums and poor risk management, the NFIP is nearly $25 billion in debt to federal taxpayers,[13] excluding the impact of Hurricane Harvey or any other storms that might make landfall in the remainder of the 2017 hurricane season. A burgeoning private market is emerging that could take on more flood risk, but to do so will require continued access to affordable reinsurance coverage from the global market.[14]

According to Aon Benfield's Annual Global Climate and Catastrophe Report, while 72 percent of the 315 natural catastrophes catalogued around the world in 2016 occurred outside the United States, the nation still accounted for 56 percent of the $54 billion in global insured losses from natural catastrophes.[15]

10. Michael Cragg, et al., 2017.

11. R.L. Carter, ed., *Reinsurance: Second Edition*, Springer, p. xiii, 1983.
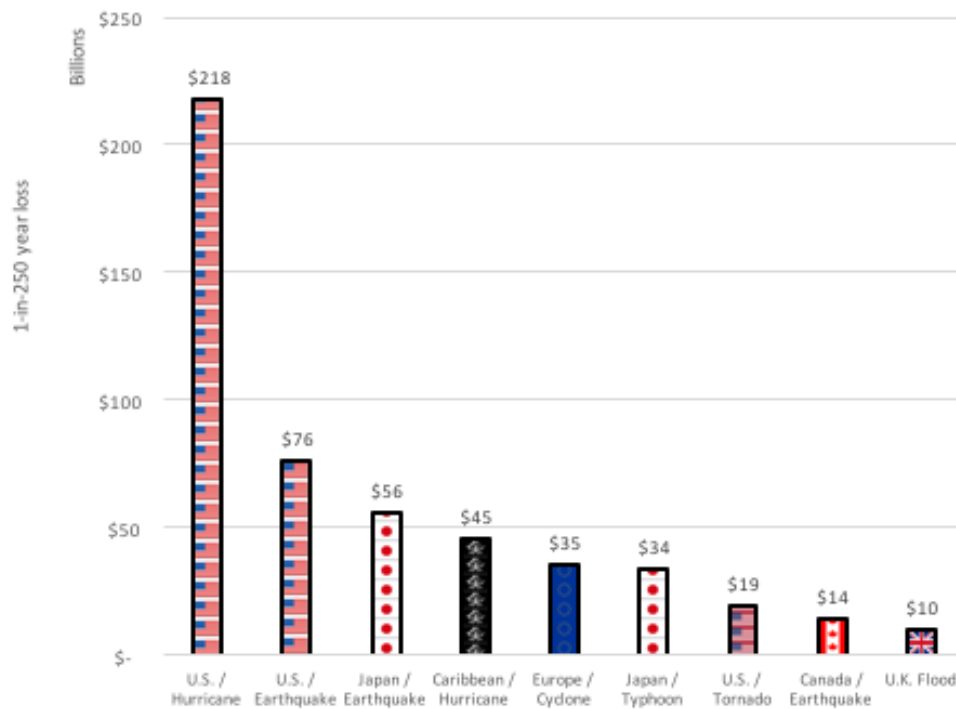
12. Federal Emergency Management Agency, "Flooding – Our Nation's Most Frequent and Costly Natural Disaster," March 2010. https://www.fbiic.gov/public/2010/mar/FloodingHistoryandCausesFS.PDF

13. House Financial Services Committee, "Flood Insurance Program Takes another $1.6 Billion from Taxpayers," Jan. 17, 2017. http://financialservices.house.gov/news/documentsingle.aspx?DocumentID=401349

14. Michael Thrasher, "The Private Flood Insurance Market Is Stirring After More Than 50 Years Of Dormancy," *Forbes*, Aug. 26, 2016. https://www.forbes.com/sites/michaelthrasher/2016/08/26/the-private-flood-insurance-market-is-stirring-after-more-than-50-years-of-dormancy/#1a2bc7f56dda

15. Aon Benfield, "2016 Annual Global Climate and Catastrophe Report," Jan. 17, 2017. http://thoughtleadership.aonbenfield.com/Documents/20170117-ab-if-annual-climate-catastrophe-report.pdf

SOURCE: Average of AIR and RMS catastrophe models insured perils output. Estimated March 2017.

Even in a nation as catastrophe-prone as America, New York distinguishes itself as an especially catastrophe-exposed state. Data from Verisk Analytics' Property Claim Services unit finds New York accounted for $9.76 billion of catastrophe losses in 2015, the highest tally of any state.[16] Indeed, going all the way back to April 1953—the earliest records kept by the Federal Emergency Management Agency—New York has been the site of 95 presidential disaster declarations.[17]

To handle all of those disasters, New Yorkers purchase insurance. As of 2012, the year Hurricane Sandy struck the state, New York was home to the most insured coastal property value vulnerable to hurricanes of any state, with $4.724 trillion in total exposure.[18] To ensure the state's continued economic prosperity, it is vital that reinsurance to cover catastrophic losses remain available and affordable.

EFFECTS OF DISCRIMINATORY TAXES ON GLOBAL REINSURANCE MARKET

To estimate the effects of a territorial tax, a discriminatory tax on insurance affiliates or a full or partial border-adjustment tax on the price of insurance in Arkansas, Missouri and Tennessee requires first to calculate the effect of such a tax on the cost of reinsurance globally and then to calculate those states' catastrophe risk exposure relative to the rest of the world.

Building on work published this year by the Brattle Group,[19] this report uses output from commercial catastrophe models[20] to estimate the change in global reinsurance capital that would be required if a tax on cross-border reinsurance transactions were to be implemented. Figure 1 presents the 1-in-250-year expected losses for the largest perils in the United States and other select locations. Extreme concentration of high-value property in areas exposed to catastrophic perils

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16. Insurance Information Institute, "Top Five States By Insured Catastrophe Losses, 2015," accessed July 1, 2017. http://www.iii.org/table-archive/20295

17. Federal Emergency Management Agency, "Disaster Declarations for New York," accessed June 12, 2017. https://www.fema.gov/disasters/grid/state-tribal-government/77?field_disaster_type_term_tid_1=All

18. AIR Worldwide, "The Growing Value of U.S. Coastal Property at Risk," July 16, 2017. http://www.air-worldwide.com/Publications/AIR-Currents/2015/The-Growing-Value-of-U-S--Coastal-Property-at-Risk/

19. Michael Cragg, et al., 2017.

20. Commercial catastrophe models, such as those offered by Risk Management Solutions (RMS) and AIR Worldwide (AIR) use physical, statistical and numerical modelling gleaned from multidisciplinary science (engineering, meteorology, statistics, and others) to augment the scarce data available on catastrophic perils for predicting future losses. These models are used by (re)insurers, financial markets, self-insured businesses, and governments to set prices for risk. Models are reviewed and approved bi-annually by the Florida Commission on Hurricane Loss Projection Methodology for use in setting residential property insurance rates in Florida. For more information, see https://www.sbafla.com/method/Home.aspx
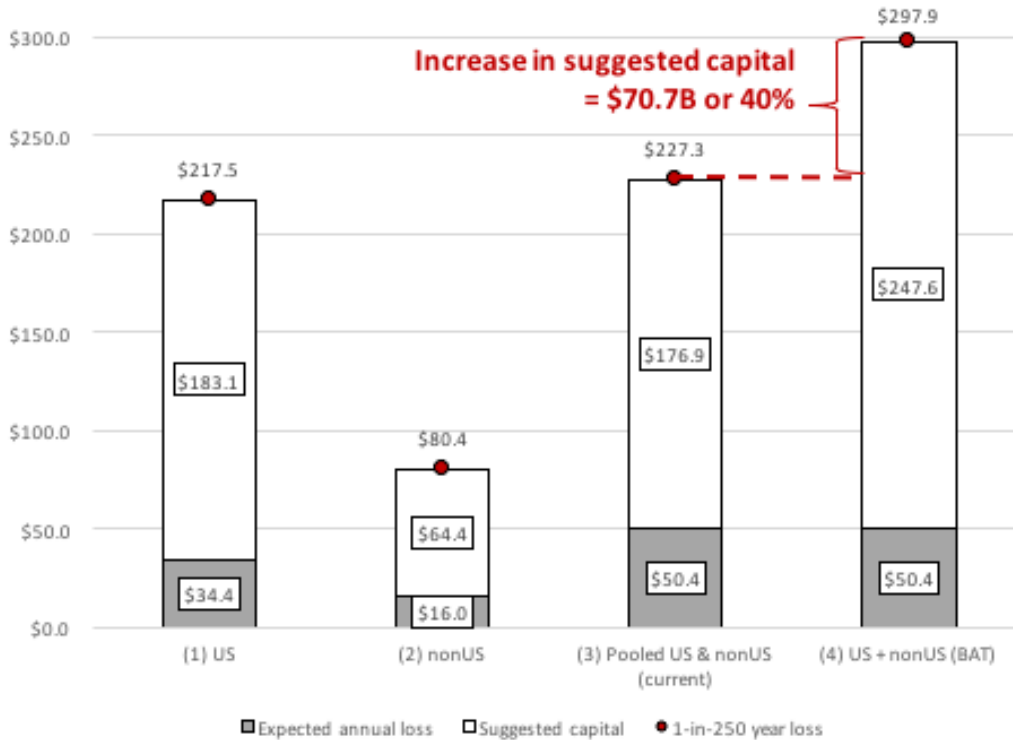
SOURCE: Average of AIR and RMS model output for the U.S. and pools primary catastrophe exposures of other modeled perils and countries. Suggested capital is the difference between 1-in-250 year loss (99.6% PML) and expected annual loss (AAL).

leaves the United States with substantially greater exposure than all other countries combined.

To provide affordable property insurance, U.S. insurers cede premiums to international reinsurers who pool U.S. hurricane, earthquake, terrorism, wildfire and tornado risks with similar exposures from around the world. Because these exposures are not strongly correlated, pooling reduces the amount of capital reinsurers must hold to insure them. Global reinsurers cover small amounts of each catastrophe exposure, along with many other P&C exposures.

Though the specifics of different territorial tax systems would differ, under any and all of them, U.S. insurers' ability to use foreign reinsurance to pool their exposures with those of other countries would be significantly constrained. Because deductions for offshore reinsurance would be disallowed—greatly increasing the relative cost of reinsurance from foreign sources—U.S. primary insurers would face overwhelming incentives to cede risks only to U.S.-domiciled reinsurers. In addition, the United States should anticipate retaliatory legislative actions from all countries affected by this type of tax system. The effect would be to isolate insurance and reinsurance capital in its respective domestic markets, requiring each country to bear its own risk.

This report uses commercial catastrophe model outputs to estimate the effects that taxing cross-border reinsurance transactions would have on reinsurance capital available to support U.S. catastrophe exposure. This calculation requires assumptions about adequacy and efficiency of current capitalization and the symmetry and efficiency of diversification across current insurers and reinsurers.

As a starting point, the analysis assumes current levels of capital in insurance and reinsurance markets are adequate and efficient. In other words, the global insurance and reinsurance markets currently have just enough capital to meet their obligations with a reasonable degree of certainty. On its face, this assumption might not seem reasonable, given the prevailing record-high levels of surplus. However, because this analysis models perils rather than firms, it also must assume that (re)insured exposures are perfectly symmetrical and efficient across the industry. This second assumption skews in the opposite direction, making it likely that the two assumptions approximately offset.[21]

A perfectly symmetrical and efficient distribution of catastrophe exposures would resemble those considered in the early

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21. Equality of these assumptions might be questionable in the opposite direction during the next hard market.

1960s by Karl Borch of the Norwegian School of Economics[22] and more recently by David Cummins and co-authors at the Wharton School.[23] Under a perfectly symmetrical and efficient distribution, each (re)insurer holds an identical portfolio of liabilities in exact proportion to its share of industry capital, as if there was only one monolithic global insurer. Reality, of course, does not mimic this perfectly efficient market, as the maximum practical level of diversification is reduced by such factors as contracting costs, moral hazard, adverse selection, rate regulation and idiosyncratic behavior. To the extent risk is not evenly distributed across companies, the industry will require additional capital to achieve the same financial strength. From this perspective, one might consider results from this analysis to be a lower bound and that the actual negative impact on real-world insurance and reinsurance markets could be significantly larger.

The red circle at the top of the far left column of Figure 2 shows the 1-in-250-year loss from hurricanes, earthquakes and tornadoes in the United States is $217.5 billion. In other words, in any given year, there is a 99.6 percent probability that U.S. insured losses from the combination of these perils will be less than $217.5 billion. The column beneath the circle separates that 1-in-250-year loss into the expected annual loss ($34.4 billion) and suggested capital to support the 99.6 percent confidence interval ($217.5 billion – $34.4 billion = $183.1 billion).

Column 2 of Figure 2 displays the 1-in-250-year expected loss, the annual expected loss and suggested capital for the combined distribution of all modeled catastrophe losses outside the United States. These perils and locations include Japanese earthquake and typhoon, Canadian earthquake, European cyclone, Caribbean hurricane and U.K. flood. The expected annual loss is $16 billion and the 1-in-250-year expected loss is $80.4 billion, leaving $64.4 billion in suggested capital.

Comparing the third and fourth columns of Figure 2 demonstrates the powerful effect of pooling uncorrelated global loss exposures. In the current global reinsurance market, these U.S. and non-U.S. loss exposures are pooled (Column 3), with a 1-in-250-year loss of $227.3 billion and total suggested capital of just $176.9 billion. However, under a discriminatory tax system that disallows deductions for foreign reinsurance, such pooling would not take place—first, as domestic insurers lost the benefit of pooling outside U.S. borders and

subsequently around the world, as other countries enacted retaliatory tax laws. Without the benefit of pooling global exposures, the U.S. and non-U.S. suggested capital amounts must be combined. In this scenario, the suggested global capital increases by $70.7 billion, or 40 percent, from $176.9 billion to $247.6 billion.

NEW YORK'S SHARE OF GLOBAL CATASTROPHE EXPOSURE

This analysis employs commercial catastrophe models to estimate the New York's share of global catastrophe exposure. We estimate New York's exposure as the difference between expected annual loss and the 1-in-250-year in New York relative to that of the rest of the world. This method captures both the size of the exposure as well as the uncertainty, which together determine the amount of capital needed to provide coverage.

The expected annual losses for catastrophe perils in New York are $1.1 billion, while the 1-in-250-year loss is $35.53 billion. The difference between these, $35.53 - $1.1 = $34.43 billion, is an estimate of the amount of capital required to insure New York for catastrophic perils. Summing this number for all states yields $676.8 billion, thus New York is $34.43 ÷ $676.8 = 4.64 percent of all U.S. capital needs. As shown above, the global figure for the same calculation is $247.6 billion. Of this $247.6 billion, the U.S. represents $183.1 ÷ $247.6 = 74 percent. Multiplying New York's share of the U.S. figure times the U.S. share of the global figure indicates New York's share of global catastrophe capital needs is approximately (0.0464 × 0.74 = 0.0343) 3.43 percent. Applying this percentage to the total amount of capital that must be raised to maintain financial strength in the global reinsurance market produces a formula of 0.0343 x $70.7 billion = $2.43 billion.

A March 2017 report by Florida Tax Watch estimates current required returns on capital for reinsurers to be 5 percent, while the historical target has been closer to 7.5 percent. Using that 5 percent figure, which is in line with coupons charged on recent catastrophe bond issuances, annual premiums in New York would have to increase by $121 million (0.05 x $2.43 billion = $121 million). Since this additional annual cost to New York consumers would persist into the foreseeable future, a multiyear figure adds appropriate perspective. Over the next decade, ignoring inflation, this analysis estimates $1.21 billion of additional expense for New York consumers.

CONCLUSION

It is not yet clear if Congress will succeed in making structural changes to the U.S. tax code, or perhaps pass a temporary tax cut that expires after 10 years. Both remain a political uncertainty. It also is uncertain whether a discriminatory tax

22. Karl Borch, "Equilibrium in a reinsurance market," *Econometrica*, Vol. 30, No. 3, pp. 424–444, July 1962. http://www.jstor.org/stable/1909887?origin=crossref&seq=1#fndtn-page_scan_tab_contents

23. J. David Cummins, Neil A. Doherty and Anita Lo, "Can insurers pay for the 'big one'? Measuring the capacity of the insurance market to respond to catastrophic losses," *Journal of Banking and Finance*, 26(2-3):557-583, March 2002. https://www.researchgate.net/publication/223224454_Can_Insurers_Pay_for_the_'Big_One'_Measuring_the_Capacity_of_an_Insurance_Market_to_Respond_to_Catastrophic_Losses

on insurance affiliates or a similar territorial tax system will be included in any final proposal.

For consumers in New York and all across the country, the real effects of applying such a scheme would be to make it harder and costlier for property owners to buy home insurance, for employers to buy workers' compensation insurance, for factories and industrial plants to insure their machinery and for contractors to get the terrorism insurance they need to erect new buildings.

It's important to bear in mind that, under the current system, insurance companies don't just import reinsurance – they also export risk. Denying insurers the ability to engage in responsible risk transfer would mean concentrating those risks here on our shores.

ABOUT THE AUTHORS

Lars Powell is executive director of the Alabama Center for Insurance Information and Research at the University of Alabama and a senior fellow of the R Street Institute. He earned a Ph.D. in risk management and insurance from the University of Georgia.

He previously held the Whitbeck-Beyer Chair of Insurance and Financial Services at the University of Arkansas-Little Rock from 2004 to 2014. Lars' primary areas of research include insurer capitalization and the effects of regulation on insurance markets. Opinions expressed in this report are the author's and do not represent those of the University of Alabama.

Ian Adams is a senior fellow with the R Street Institute, responsible for coordinating R Street's insurance research and outreach, as well as overseeing matters related to next generation transportation. He also is a frequent commentator on the disruptive impact of burgeoning technologies on law and regulation.

R.J. Lehmann is senior fellow, editor-in-chief and co-founder of the R Street Institute. He is the author the 2012-2016 editions of R Street's Insurance Regulation Report Card and numerous other R Street policy papers. He also is an associate fellow of the John Locke Institute and the James Madison Institute.