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## IMPACT OF A BORDER-ADJUSTMENT TAX ON THE LOUISIANA INSURANCE MARKET

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### EXECUTIVE SUMMARY

Louisiana's insurance markets took nearly a decade to recover fully from the damage wrought by 2005's Hurricane Katrina, the costliest insurance event in U.S. history. But as Congress prepares to consider structural changes to the U.S. tax code, proposals that target international reinsurance would have adverse consequences that could undo that progress.

Specifically, this report finds that applying a destination-based cash flow tax—better known as a “border-adjustment tax,” or BAT—to the import of reinsurance would cost Louisiana consumers an additional \$1.11 billion in higher property-casualty insurance premiums over the next decade.

This projection is derived by examining the impact a BAT system would have on the supply of international reinsurance and calculating the effects that changes in price and availability would have on the state's insurance market and

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policyholders. Because property and casualty insurers that do business in Louisiana—as in other states exposed to major natural disasters—cede a large volume of risks to foreign reinsurers, the state would experience dramatically higher insurance premiums under a BAT system.

While the precise contours of congressional tax-reform efforts are yet to be determined, proposals such as a BAT or a partial BAT, a reciprocal tax, territorial tax, a discriminatory tax on insurance affiliates or a minimum tax all would affect insurers' ability to use reinsurance to spread risk globally, and hence disproportionately harm consumers in states like Louisiana and their ability to secure insurance coverage for their homes, cars and businesses. Should Congress ultimately consider a BAT as part of an overall tax-reform package, it should note that developed nations that employ the conceptually similar value-added tax (VAT) system almost universally exempt financial services like reinsurance from the tax.

## TAX REFORM AND THE BAT

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.

Senate rules require only 50 votes to pass legislation moved through the “budget reconciliation” process, which limits floor debate to 20 hours for budget measures. However, under the so-called “Byrd Rule”—named for the former majority leader—a reconciliation measure can be blocked on the floor if it either includes extraneous non-budget provisions or if it would increase the size of the federal deficit in years subsequent to the 10-year congressional budget window. To waive such points of order requires 60 votes, similar to the rule to invoke cloture and cut off a filibuster.<sup>1</sup> To achieve Republicans' longstanding goal of reducing the U.S. corporate income tax rate, which is among the highest in the world, would require a plan that either cuts spending or raises other taxes in ways that are deficit-neutral.

At the time of this writing, Republican leadership had yet to introduce tax-reform legislation in the 115<sup>th</sup> Congress. For its part, the White House has offered a one-page summary of its tax-reform plan that does not spell out many of the specific details of its approach.<sup>2</sup> Thus, given that tax legislation must originate in the House of Representatives, most early attention remains focused on the “Better Way” plan drafted by the House Republican Tax Reform Task Force.<sup>3</sup> Initially unveiled in June 2016, the proposal identified a series of problems with the existing code and offered solutions intended to broaden the base, lower rates, minimize taxes on savings and investment and make the corporate tax system more competitive internationally.

Among the plan's most notable changes is a proposed shift 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 write off the costs of goods and services sourced from abroad. The revenues raised by this shift—estimated to be roughly \$1 trillion over

a decade—would be used to lower the federal corporate tax rate from the current 35 percent to about 20 percent.<sup>4</sup>

The BAT often is compared to a value-added tax, or VAT, a system currently in place in roughly 160 countries around the world.<sup>5</sup> In fact, there are significant differences between the two. Most obviously, the former is a system for taxing corporate income, while the latter taxes consumption—specifically, the value added at each stage of production for both goods and services. One significant feature both the BAT and VAT do have in common is that both have the effect of taxing imports, but not exports.

However, the overwhelming majority of countries that maintain a VAT—including all members of the European Union—exempt insurance and other financial services. This is due largely to the inherent difficulty in calculating the portion of interest income or underwriting premium that actually constitutes “value added,” separate from the risk-free interest rate and premium for risk of default (in banking) or the discounted present value of expected future benefits and any risk premium (in insurance).<sup>6</sup> Applying the VAT to financial services would thus overtax the sector in ways that discourage capital formation.

Under existing law, domestic insurance companies may write off the cost of purchasing 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.

In several recent sessions of Congress, legislation has been introduced that would limit domestic insurers' ability to

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1. Gregory Koger, “8 questions about the Senate's Byrd Rule you were too embarrassed to ask,” *Vox*, Oct. 28, 2015. <http://www.vox.com/mischiefs-of-faction/2015/10/28/9603518/byrd-rule-planned-parenthood>

2. White House, “2017 Tax Reform for Economic Growth and American Jobs,” April 26, 2017. <http://www.journalofaccountancy.com/content/dam/jofa/news/2017-tax-reform-for-economic-growth.jpg>

3. House Republican Tax Reform Task Force, “A Better Way: Our Vision for a Confident America,” June 24, 2016. [http://abetterway.speaker.gov/\\_assets/pdf/ABetter-Way-Tax-PolicyPaper.pdf](http://abetterway.speaker.gov/_assets/pdf/ABetter-Way-Tax-PolicyPaper.pdf)

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4. Kyle Pomerleau and Stephen J. Entin, “The House GOP's Destination-Based Cash Flow Tax, Explained,” Tax Foundation, June 30, 2016. <https://taxfoundation.org/house-gop-s-destination-based-cash-flow-tax-explained/>

5. U.S. Government Accountability Office, “Value-Added Taxes: Lessons Learned from Other Countries on Compliance Risks, Administrative Costs, Compliance Burden, and Transition,” April 2008. <http://www.gao.gov/assets/280/274387.pdf>

6. Peter R. Merrill, “VAT treatment of the financial sector,” *Tax Analysts*, p. 163-185, 2011. [http://www.taxanalysts.com/www/freefiles.nsf/Files/MERRILL-13.pdf/\\$file/MERRILL-13.pdf](http://www.taxanalysts.com/www/freefiles.nsf/Files/MERRILL-13.pdf/$file/MERRILL-13.pdf)

write off the cost of reinsurance ceded to offshore affiliates.<sup>7</sup> 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 Louisiana would be to raise the price of homeowners insurance by 0.5 percent and the price of commercial multi-peril insurance by 1.6 percent.<sup>8</sup>

Should a BAT be applied to international insurance transactions, it would go further still. Domestic insurance companies would only be permitted to deduct the cost of reinsurance purchased from a reinsurer domiciled in the United States, while deductions for reinsurance purchased from foreign reinsurers—whether affiliated or unaffiliated—would be disallowed entirely.

The “Better Way” plan did not clarify whether House Republicans intend their BAT proposal to apply to international financial services transactions and, at the time of this publication, there is no legislative language to elucidate the question. Were Congress to adopt a BAT that includes insurance and financial services, it would make the United States a global aberration. In fact, among major nations, only China currently applies a VAT to cross-border reinsurance transactions.<sup>9</sup>

Should Congress implement a BAT system that applies to the import of insurance and reinsurance, the effects would be felt most significantly in states like Louisiana, 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 \$11.07 billion of premium in Louisiana alone, according to data provided by S&P Global Market Intelligence.<sup>10</sup>

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 AIG. 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.<sup>11</sup> Figure 1 offers a breakdown of sources of the \$1.1 trillion of reinsurance ceded by U.S. property and casualty insurers to reinsurers over the past 10 years, using data from S&P Global Market Intelligence. The totals include \$264.9 billion ceded to unaffiliated foreign reinsurers and \$334.6 billion ceded to unaffiliated domestic reinsurers; \$354.3 billion ceded to foreign affiliates (those owned by the same insurance group as the ceding insurer) and \$50.0 billion ceded to domestic affiliates; and \$86.2 billion ceded to pools.<sup>12</sup>

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=03D45963-9516-48FE-841A-142049D8FA4A](http://www.warner.senate.gov/public/index.cfm/pressreleases?ContentRecord_id=03D45963-9516-48FE-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](http://www.brattle.com/system/news/pdfs/000/001/172/original/Brattle_Impact_Study_2017.pdf?1485188542)

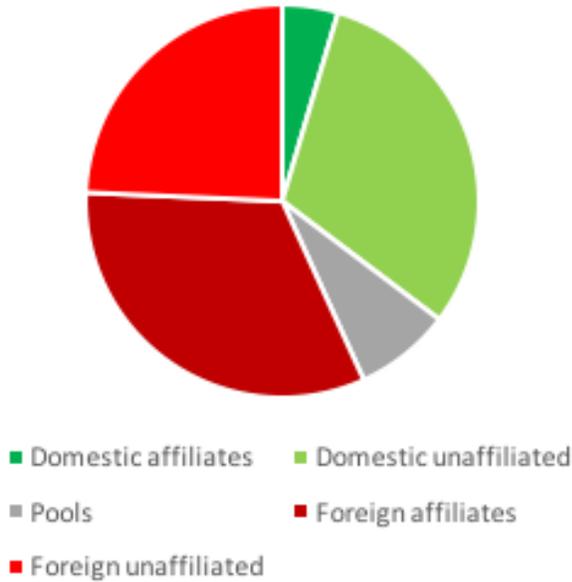
9. Ying Chen, “China Clarifies Reinsurance Status under VAT Regime,” TMF Group, July 1, 2016. <http://www.mondaq.com/china/x/505542/sales+taxes+VAT+GST/China+Clarifies+Reinsurance+Status+Under+VAT+Regime>

10. SNL Financial P&C Insurance Market Share Application, accessed April 27, 2017. <http://www.snl.com>

11. Michael Cragg, et al., 2017.

12. SNL Financial P&C Insurance Industry Briefing Book, accessed April 27, 2017. <http://www.snl.com>

**FIGURE I: REINSURANCE CESSIONS BY U.S. P&C INDUSTRY, 2006-2015**



SOURCE: S&P Global Market Intelligence

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—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.<sup>13</sup>

## CATASTROPHE RISK IN THE UNITED STATES AND LOUISIANA

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.

13. R.L. Carter, ed., *Reinsurance: Second Edition*, Springer, p. xiii, 1983.

Floods are the most common and costly natural disasters,<sup>14</sup> 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, having just borrowed an additional \$1.6 billion from the federal Treasury in January 2017.<sup>15</sup> 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.<sup>16</sup>

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.<sup>17</sup>

Even in a nation as catastrophe-prone as America, Louisiana distinguishes itself as an especially catastrophe-prone state. Data from Verisk Analytics’ Property Claim Services unit finds Louisiana accounted for \$1.23 billion of catastrophe losses in 2016, the third-highest tally of any state. It was also the site of the costliest catastrophe in U.S. history, Hurricane Katrina.<sup>18</sup> That 2005 event, in adjusted dollars, cost \$49 billion. Indeed, going all the way back to April 1953—the earliest records kept by the Federal Emergency Management Agency—Louisiana has been the site of 76 presidential disaster declarations and 64 major disaster declarations.<sup>19</sup>

Given that tendency for disaster, it should not be surprising that Louisiana routinely proves to be among the costliest states in which to insure property. According to the National Association of Insurance Commissioners, Louisiana had the nation’s second-highest homeowners insurance rates in

14. 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>

15. 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>

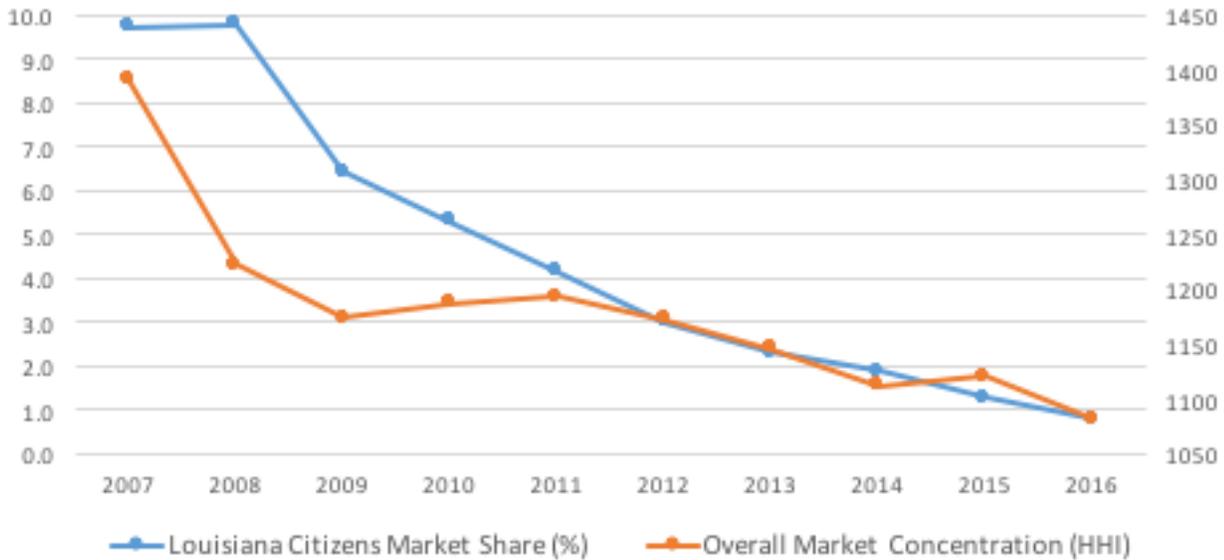
16. Michael Thrasher, “The Private Flood Insurance Market Is Stirring After More Than 50 Years Of Dormancy,” *Forbes*, Aug. 26, 2016. <https://www.forbes.com/sites/michaelthrasher/2016/08/26/the-private-flood-insurance-market-is-stirring-after-more-than-50-years-of-dormancy/#1a2bc7f56dda>

17. 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>

18. Insurance Information Institute, “2016 Natural Catastrophes,” accessed April 19, 2017. <http://www.iii.org/fact-statistic/catastrophes-us>

19. Federal Emergency Management Agency, “Disaster Declarations for Louisiana,” accessed April 27, 2017. [https://www.fema.gov/disasters/grid/state-tribal-government/4?field\\_disaster\\_type\\_term\\_tid\\_1=All](https://www.fema.gov/disasters/grid/state-tribal-government/4?field_disaster_type_term_tid_1=All)

**FIGURE 2: COMPETITION IN THE LOUISIANA HOMEOWNERS INSURANCE MARKET**



SOURCE: Analysis of S&P Global Market Intelligence data

2013, the last year for which data are available.<sup>20</sup> Indeed, in some cases, consumers struggle to find coverage at all.

In the aftermath of Hurricane Katrina, Louisiana suffered significant dislocation in its property insurance market, with many insurers choosing to withdraw capacity and limit exposure. By 2007, nearly one-in-ten homeowners insurance premium dollars in the state went to Louisiana Citizens Property Insurance Corp., the state-backed writer of residential and commercial insurance properties that the Legislature created in 2003. The market also was significantly more concentrated than is typical in the personal lines insurance industry. Using the Herfindahl-Hirschman Index—the tool used by the U.S. Justice Department and Federal Trade Commission to assess the degree to which markets are subject to monopolistic concentration—Louisiana’s homeowners insurance market in the mid- and late 2000s came close to the 1,500 HHI benchmark federal regulators use to judge a “concentrated” market.

As demonstrated in Figure 2, over the decade from 2007 to 2016, buoyed by record levels of capital in the international reinsurance markets, competition returned to Louisiana’s homeowners insurance market. Both the market’s HHI figure and the market share held by Louisiana Citizens fell precipitously. Indeed, even Citizens’ itself has taken advantage of “soft” reinsurance pricing to transfer risk off the backs of policyholders and taxpayers and on to the global private

market. For the 2016 storm season, Louisiana Citizens placed \$650 million of reinsurance and catastrophe bonds.<sup>21</sup>

In addition to residential property insurance, Louisiana is heavily reliant on foreign insurance and reinsurance capacity to the oil and gas industry. Both Oil Insurance Ltd. and Oil Casualty Insurance Ltd.—which are “captive” insurance companies owned by the oil and gas industry—are headquartered in the island territory of Bermuda. OIL provides \$6.9 billion of property insurance coverage to its members with Gulf of Mexico assets. Moreover, of the 40 insurance companies to report losses from 2010’s Deepwater Horizon disaster, 16 are based in Bermuda, 13 are European, nine are American, one is Australian and one is Japanese.

Swings in the price and availability of reinsurance thus play an outsized role in determining whether Louisiana consumers have access to affordable property insurance or, in some cases, whether coverage will be available at all.

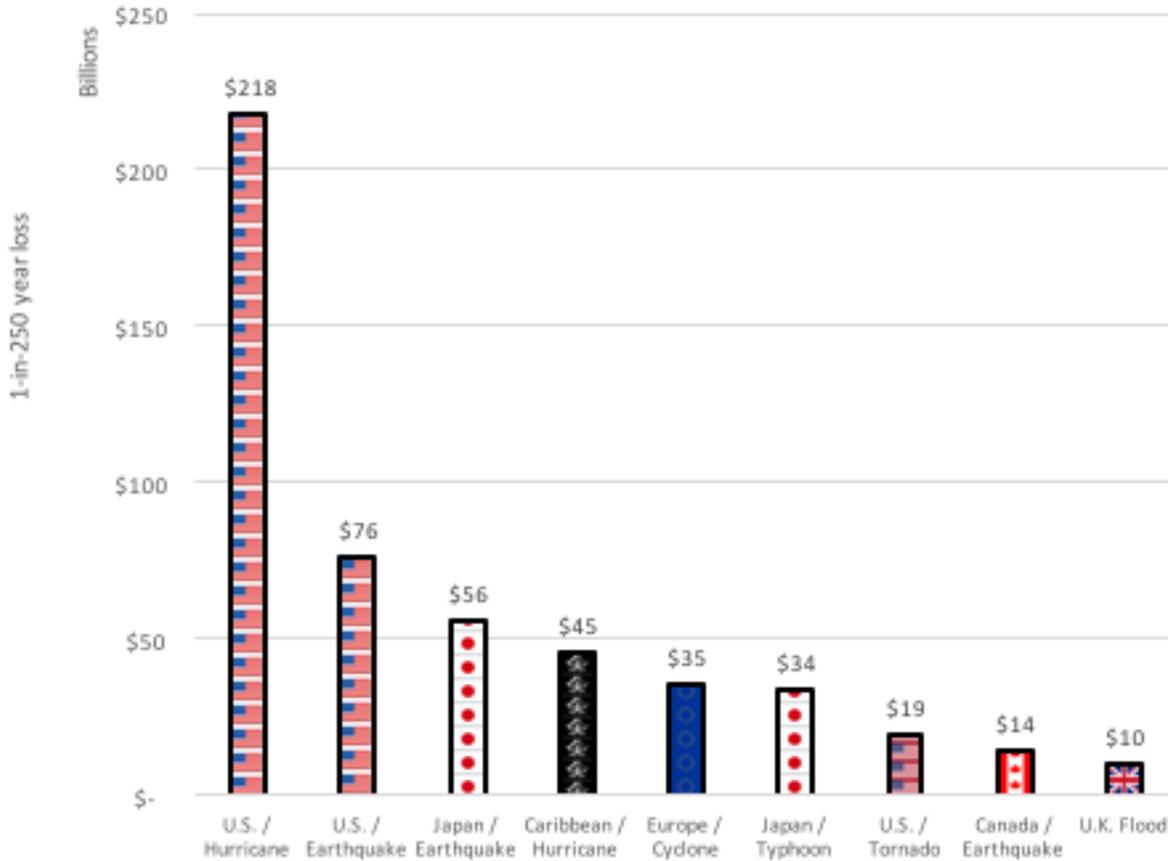
### EFFECTS OF BAT ON GLOBAL REINSURANCE MARKETS

To estimate the effects of a BAT on the price of insurance in Louisiana requires first to calculate the effect of a BAT on the cost of reinsurance globally and then to calculate Louisiana’s catastrophe risk exposure relative to the rest of the world.

20. National Association of Insurance Commissioners, “Dwelling Fire, Homeowners Owner-Occupied, and Homeowners Tenant and Condominium/Cooperative Unit Owners Insurance: Data for 2013.” [http://www.naic.org/documents/prod\\_serv\\_statistical\\_hmr\\_zu.pdf](http://www.naic.org/documents/prod_serv_statistical_hmr_zu.pdf)

21. Louisiana Citizens Property Insurance Corp., “Annual Statement for the Year 2016,” March 30, 2017. <http://www.lacitizens.com/docs/default-source/financial-reports-and-statements/2016-md-amp-a---final.pdf?sfvrsn=4>

FIGURE 3: EXPOSURE TO CATASTROPHIC PERILS (\$B)



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

Building on work published this year by the Brattle Group,<sup>22</sup> this report uses output from commercial catastrophe models<sup>23</sup> to estimate the change in global reinsurance capital that would be required if a BAT were to be implemented. Figure 3 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 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. hurri-

cane, 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.

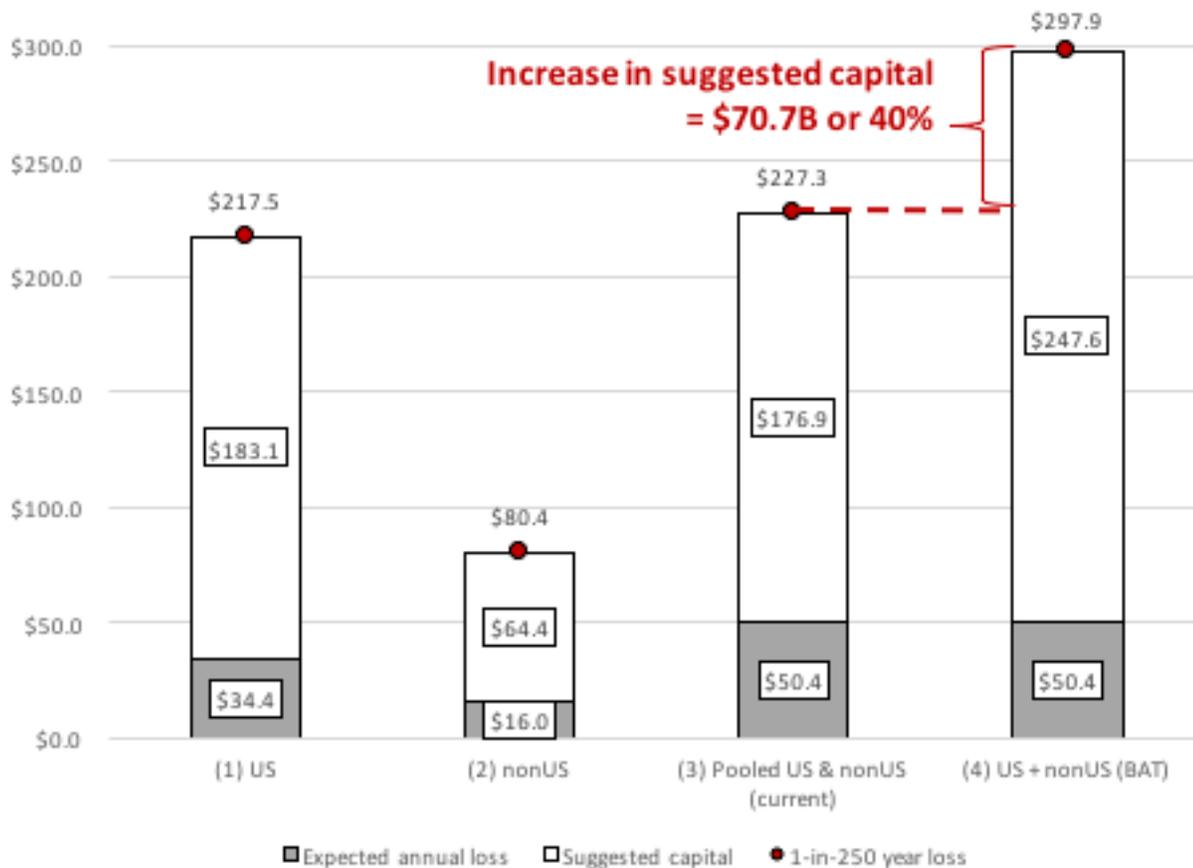
Under a BAT, U.S. insurers’ ability to use foreign reinsurance to pool their exposures with those of other countries largely would be eliminated. Because deductions for offshore reinsurance would be disallowed—greatly increasing the relative cost of reinsurance from foreign sources—U.S. primary insurers 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 the BAT. 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 of a BAT on reinsurance capital available

22. Michael Cragg, et al., 2017.

23. Commercial catastrophe models, such as those offered by Risk Management Solutions (RMS) and AIR Worldwide (AIR) use physical, statistical and numerical modeling 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>

FIGURE 4: EFFECT OF BAT ON GLOBAL REINSURANCE CAPITAL FOR CATASTROPHES (\$B)



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).

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.<sup>24</sup>

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

A perfectly symmetrical and efficient distribution of catastrophe exposures would resemble those considered in the early 1960s by Karl Borch of the Norwegian School of Economics<sup>25</sup> and more recently by David Cummins and co-authors at the Wharton School.<sup>26</sup> 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

25. 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#fn-dn-page\\_scan\\_tab\\_contents](http://www.jstor.org/stable/1909887?origin=crossref&seq=1#fn-dn-page_scan_tab_contents)

26. 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](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)

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 4 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 4 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 4 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 BAT, 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 dollars.

## LOUISIANA'S SHARE OF GLOBAL CATASTROPHE EXPOSURE

This analysis employs commercial catastrophe models<sup>27</sup> to estimate Louisiana's share of global catastrophe exposure. We estimate Louisiana's exposure as the expected annual loss in Louisiana relative to the rest of the world.

The expected annual losses for catastrophe perils in Louisiana are \$2.22 billion, while the global figure is \$50.4 billion. Thus, Louisiana represents 3.14 percent of global catastrophe

27. All catastrophe model output in this report are averages from the most recent AIR and RMS models.

exposure. 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  $0.0314 \times \$70.7 \text{ billion} = \$2.22 \text{ billion}$ .

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.<sup>28</sup> Using that 5 percent figure, which is in line with coupons charged on recent catastrophe bond issuances, annual premiums in Louisiana would have to increase by \$111 million ( $0.05 \times \$2.22 \text{ billion} = \$111 \text{ million}$ ). Since this additional annual cost to Louisiana consumers would persist into the foreseeable future, a multiyear figure adds appropriate perspective. Over the next decade, ignoring inflation, this analysis estimates \$1.11 billion of additional expense for Louisiana consumers.

## CONCLUSION

Whether Congress will proceed with actual structural changes to the U.S. tax code, or a temporary tax cut that expires after 10 years, remains a large political uncertainty. It also is uncertain whether the border-adjustment tax will be included in the final proposal. Sen. Jon Cornyn, R-Texas, the Senate's second-highest-ranking Republican, recently was quoted as telling reporters that "with many people skeptical of how it would work, the border adjustment tax is probably dead."<sup>29</sup> It also is noteworthy that the tax-reform principles distributed by the White House do not endorse the border-adjustment idea, although they do make reference to a "territorial tax" whose provisions were not detailed.<sup>30</sup>

With time to ponder the consequences of what would be radical changes to the structure of the U.S. tax code, Congress should bear in mind how the border-adjustment tax proposal would affect insurance and reinsurance markets across the country and around the world. The merits and drawbacks of a border-adjustment tax more generally are beyond the scope of this analysis. But for consumers in Louisiana and all across the country, the real effects of applying a BAT to insurance and reinsurance—or of imposing a reciprocal tax, territorial tax, discriminatory tax on affiliates or any other tax that would affect insurers' ability to use reinsurance to spread risk globally—would be to make it harder and costlier for property owners to buy home insurance, for employers

28. Florida Tax Watch, "The Effects of a Border-Adjusted Tax on Florida's Property Insurance Market," March 2017. <http://www.floridatowatch.org/resources/pdf/BAT-Analysis-FINAL.pdf>

29. Jordain Carney, "Senate's No. 2 Republican: Border tax 'probably dead,'" *The Hill*, April 27, 2017. <http://thehill.com/blogs/floor-action/senate/330971-top-senate-gop-border-tax-probably-dead>

30. White House, "2017 Tax Reform for Economic Growth and American Jobs," April 26, 2017. <http://www.journalofaccountancy.com/content/dam/jofa/news/2017-tax-reform-for-economic-growth.jpg>

to buy workers' compensation and for oil and gas concerns to insure the refineries and offshore drilling platforms that remain the lifeblood of the state's economy.

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.

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31. Opinions expressed in this report are those of the authors and do not represent those of the University of Alabama.