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GOVERNMENT SOURCES OF SYSTEMIC INSURABLE RISK

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INTRODUCTION

In mid-2013, three years after the Dodd-Frank Act's passage, American International Group Inc. and Prudential Financial Inc. became the first insurance companies to be designated by the Financial Stability Oversight Council as non-bank financial companies that were nonetheless "systemically important financial institutions."[1] MetLife Inc., which had been regulated as a bank holding company prior to divesting all of its banking operations, is widely expected to become the third.

FSOC is the "college of regulators" created by Dodd-Frank and granted broad powers under the law to police systemic risk in the financial system, including heightened government scrutiny of designated firms. In conjunction with a similar designation process currently underway internationally by the G-20 countries, in consultation with the International Association of Insurance Supervisors, the move by FSOC made clear that the business of insurance – in the United States, historically regulated at the state level –would be treated as a potential source of risk to the broader financial system.

This sea change has caused considerable consternation among industry leaders, who understandably fear both draconian regulatory oversight and the imposition of bank-centric rules that do not fit the needs and challenges of insurance markets. The property/casualty industry has been particularly adamant that their sector is not a source of systemic risk and that P&C insurers should not come under the rubric of any systemic risk regulatory regime.

While it is true that the business of P&C insurance is not generally systemically risky, there have been notable exceptions where the excessive concentration of insured or insurable P&C risks has threatened the broader economy. At the same time, regulators continue to pay insufficient attention to some genuine sources of systemic risk: namely, the accumulation of excessive insurable property/casualty risks within some state and federal enterprises.

This paper takes a look at some of those hidden, heretofore unquantified risks, with particular attention to the ways U.S. taxpayers are exposed to risks that should properly be borne by the global insurance industry.

IS THERE SYSTEMIC RISK IN THE P&C INDUSTRY?

To the P&C industry itself, the answer would appear to be a categorical "no." During the drafting of the Dodd-Frank Act, the U.S. industry's major trade associations were unanimous in their declaration that P&C insurance posed no threat of systemic risk. For example, the National Association of Mutual Insurance Companies declared in November 2009 that "virtually every examination of what happened last year

1. Ian Katz & Zachary Tracer, " AIG, Prudential Named Systemically Important by Panel," Bloomberg, June 4, 2013. http://www.bloomberg.com/news/2013-06-03/u-s-regulators-vote-to-label-some-non-banks-systemically-risky.html

has found that property/casualty insurance played no significant role in the crisis and that property/casualty insurers inherently pose no systemic risk to the economy."[2]

Those sentiments were echoed by David Sampson, president and CEO of Property and Casualty Insurers Association of America, in a January 2010 interview:[3]

> We do continue to make the case strongly – both publicly and in private conversations with elected officials – that home, auto and business insurers clearly present no systemic risk, that we did not cause the existing crisis, and that we are already well regulated at the state level.

Generally speaking, the evidence supports those assertions. In ordinary times and in most standard markets, the business of P&C insurance does not pose a systemic risk to the national or global financial markets. During 2012, despite persistently low interest rates and $35 billion in catastrophe losses, P&C insurers had overall after-tax net income of $33.5 billion, up from $19.5 billion in 2011.[4] Indeed, despite the challenges of minimal investment returns and very large catastrophe losses for much of the last decade, the industry has remained highly stable and highly competitive.

The P&C industry has routinely had a Herfindahl-Hirschman Index score – the metric used by the U.S. Department of Justice and Federal Trade Commission to assess horizontal mergers – of less than 1,000, indicating an "unconcentrated" market.[5] A look at the U.S. industry's top ten P&C insurance groups in 2012, listed below, show they constitute just 46 percent of the total market, with hundreds of smaller competitors comprising the majority of coverage the industry writes.

Having diverse sources of insurance capital and a highly competitive industry helps to offset major insolvencies, which historically have been both rare and manageable. In the traditional P&C industry, the largest insolvencies of the past quarter century – the $1.11 billion insolvency of Reliance Insurance Co. in 2001, the $1.02 billion insolvency of Legion Insurance Co. in 2002 and the $750.8 million insolvency of California Compensation Insurance Co. in 2000 – were each managed through the state guaranty fund system without incident, and other firms quickly moved to fill the void each of these companies left. Indeed, the total $5.03 billion cost of the ten largest insolvencies of the past quarter century amounts to just slightly more than a third of the direct premiums written in 2012 by USAA, the tenth largest insurance group.

FIGURE I: TOP P&C INSURER MARKET SHARES

Rank	Group	Direct premiums written ($000)	Market share (%)
1	State Farm	53,654,237	10.3
2	Liberty Mutual	28,297,511	5.4
3	Allstate Corp.	26,652,040	5.1
4	AIG	23,596,418	4.5
5	Travelers Cos.	22,695,958	4.3
6	Berkshire Hathaway	20,236,495	3.9
7	Farmers Group	18,311,402	3.5
8	Nationwide Group	17,042,933	3.3
9	Progressive Corp.	16,559,746	3.2
10	USAA Group	13,286,274	2.5

Source: SNL Financial via Insurance Information Institute[6]

EXCEPTIONS TO THE RULE

While the P&C industry as a whole is competitive, solvent and well-regulated, it is not impossible for failures in the P&C market to present risks to the broader economy.

The most obvious case is clearly AIG, which was the largest P&C insurer in the world[7] not long before its risky bets and $182 billion bailout made it the poster child for systemic risk. The commonly offered defense for why AIG's monumental failure should be considered typical for the industry is that the company's troubles did not arise out of its ordinary insurance underwriting business. By and large, that is true. The proximate cause of AIG's failure was that the company's AIG Financial Products unit was a major counterparty on credit default swap guarantees of collateralized debt obligations, and proved unable to make large collateral calls without federal assistance.

The company also faced difficulties rolling over the debt of its consumer credit and aircraft leasing businesses, and meeting collateral calls on its securities lending business. The latter is of particular relevance to the question at-hand, as securities lending is used by insurance companies to enhance the returns on their investment portfolios. In AIG's case, the securities lending business – which reached $76 billion of borrowings outstanding at its peak and was $59 billion at the

2. Press release, "NAMIC Responds to Dodd Financial Regulatory Overhaul Draft," National Association of Mutual Insurance Companies, Nov. 10, 2009. http://www.namic.org/Home/ReadArticle/311e011d-a9a0-4db4-8a5a-61ed1cd84978

3. Sharon K. Moorhead, "Q&A with PCI President & CEO David A. Sampson," *Florida Underwriter,* Jan. 1, 2010. http://www.propertycasualty360.com/2010/01/01/qa-with-pci-president--ceo-david-a-sampson

4. Robert R. Hartwig. "2012 Year End Results," Insurance Information Institute, April 25, 2013, http://www.iii.org/articles/2012-year-end-results.html

5. United States De+partment of Justice, "The Herfindahl-Hirschman Index." http://www.justice.gov/atr/public/testimony/hhi.htm

6. Insurance Information Institute, "Insurance Company Rankings," http://www.iii.org/facts_statistics/insurance-company-rankings.html

7. Jacqueline S. Gold, "Is AIG's Hank Greenberg next?," CNN/Money, Oct. 27, 2004. http://money.cnn.com/2004/10/26/news/fortune500/aig_outlook/

time of its September 2008 bailout – was an outgrowth of its life insurance subsidiaries' investments. However, the P&C industry does participate in the business, with about $7.36 billion of investments lent under securities lending agreements (compared to $46.46 billion for the life industry) as of March 2011.[8]

Moreover, while "runs" are most associated with traditional depository banking, the 2008 financial crisis showed that investment banks, money market funds, and under some circumstances, even insurers can be subject to runs, as well. When the federal bailout of AIG was announced, AIA Ltd., which had been AIG's largest Asian life insurance unit and was considered the "crown jewel" of its global insurance empire, actually did experience runs in a number of countries. The most notable of these was in Singapore, where thousands lined up outside of customer service centers to withdraw their funds.[9]

But while AIG structured the protection it offered to exotic collateralized securities in the form of credit default swaps, there was a parallel industry within the P&C sector offering essentially the same protection in the form of insurance. In fact, the collapse of the financial guaranty insurers, better known as "bond insurers," in late 2007 and early 2008 arguably served as the first shoe to drop in what would become the financial crisis. Before long, essentially all of the major bond insurers – companies like MBIA Corp., Ambac Financial Group, Financial Guaranty Insurance Co. and Financial Security Assurance Inc. – would end up in runoff, bankruptcy or both.

This would emerge as a possible source of systemic risk when the $2.7 trillion municipal bond market, which long had relied on coverage provided by the bond insurers to earn the highest credit strength ratings, saw the financial guaranty insurance market disappear. By early 2009, Congress was considering legislation called the Municipal Bond Insurance Enhancement Act that would create a temporary federal reinsurance program for these so-called monoline insurers. For its part, the financial guaranty industry welcomed the legislation, with Sean McCarthy, then-president and chief operating officer of FSA, testifying that Congress should "restore investor confidence in local government bonds and generally promote a return of liquidity to the market."[10]

> Although economic conditions have stressed local government bond credits, the problems facing them are more centered on the lack of liquidity in the market. These credits are not troubled credits, and across the spectrum generally remain sound investments. A comparison of the large spread differences between municipal and wider-spread corporate and asset-backed bonds confirms municipals' higher credit worthiness. Therefore, the illiquidity in today's municipal market is largely the result of problems elsewhere in the debt capital markets. And this circumstance will not correct itself without federal assistance. Just as liquidity is a key source of relief, federal support of the bond insurance companies through the provision of credit capacity in the form of reinsurance is necessary for state and local government borrowers seeking to raise necessary capital to continue their operations.

Similar problems befell the mortgage guaranty insurance industry, where former market leaders like MGIC, PMI, Radian, Old Republic and Genworth also moved their mortgage insurance units into runoff and liquidation. (Perhaps ironically, one of the only mortgage insurers to come through the financial crisis relatively unscathed was AIG's own United Guaranty Corp. subsidiary.) As in the financial guaranty insurance industry, the collapse of the mortgage insurance market had broader systemic effects, extending the housing slump as potential borrowers without the cash for a 20 percent down payment found they were unable to obtain loans. Initially, the problem was sufficiently severe that James Lockhart, then-director of the Federal Housing Finance Agency, argued the U.S. Treasury should open up the Troubled Asset Relief Program to save the mortgage insurers, citing not only the impacts on the housing market, but the exposure of the Government-Sponsored Enterprises – the Federal National Mortgage Association (better known as "Fannie Mae") and the Federal Home Loan Mortgage Corp. (better known as "Freddie Mac") – to the mortgage insurance market:

> The Enterprises' substantial counterparty credit risk exposure to private mortgage insurers totaled $184 billion at year-end 2008 and accounted for 85 percent of those insurers' risk in-force at that time. Currently, delinquency rates are increasing significantly for all mortgage insurers, their capital positions are eroding and their credit ratings are falling. Many insurers are operating in a capital preservation mode in an attempt to avoid breaching risk-to-capital levels, which would require their regulators to put them in runoff, ending their ability to take on new business.[11]

8. National Association of Insurance Commissioners, "Securities Lending in the Insurance Industry," NAIC Capital Markets Special Reports, July 8, 2011. http://www.naic.org/capital_markets_archive/110708.htm

9. Neel Chowdhury, "AIG Bailout Spooks Customers Around the World," Time, Sept. 17, 2008. http://content.time.com/time/world/article/0,8599,1841857,00.html

10. Testimony of Sean W. McCarthy, "Legislative Proposals to Improve the Efficiency and Oversight of Municipal Finance," House Financial Services Committee, May 29, 2009. http://www.gpo.gov/fdsys/pkg/CHRG-111hhrg51596/html/CHRG-111hhrg51596.htm

11. Statement of James B. Lockhart, "The Present Condition and Future Status of Fannie Mae and Freddie Mac," House Financial Services Committee, June 9, 2009. http://www.fhfa.gov/webfiles/2707/FHFA_Director%27s_Testimony_Final.pdf

The ultimate solutions to the mortgage insurance collapse relaxations of FHFA rules, first to allow the GSEs to refinance homes with loan-to-value ratios of up to 105 percent, and ultimately, to allow the Federal Housing Administration to step into the void left by private mortgage insurers and write the overwhelming majority of new coverage directly. We are now starting to see the fruits of the latter decision, with the recently announced $1.7 billion injection of taxpayer funds to prop up the FHA's insurance program, the first bailout in the program's history.[12]

But it isn't just housing-related markets where the collapse of P&C insurance protection has proven systemically important. Though generally loathe to admit the possibility that the sector can be a source of systemic risk, P&C industry leaders have been quite vocal about the central role commercial insurance coverage plays in the broader economy, citing that role as justification to create and extend the $100 billion Terrorism Risk Insurance Program. In an April 2005 hearing on the program's extension, then-Ace Ltd. Chairman Brian Duperreault testified that failing to renew the federal terrorism backstop would "have a severe, negative effect on the national economy, including job loss, stalled commercial transactions and delayed construction projects."

> Market stability provided by a federal backstop will be replaced by the market uncertainty that characterized the post-September 11, pre-TRIA economy. Accordingly, we urge Congress to act as soon as possible to provide a continuing federal backstop and to consider long-term solutions for managing our nation's economic exposure to catastrophic terrorism.[13]

Similar sentiments were echoed two years later by Swiss Re America Chairman Roger Ferguson, who, as former vice chairman of the Federal Reserve, must be counted as an expert on systemic risk. Ferguson told the House Financial Services Committee in March 2007 that, following the Sept. 11 attacks:

> In a clear case of market failure, real estate projects, particularly those in target areas such as New York, were delayed or canceled, because insurance could not be secured. This economic domino effect ultimately resulted in the loss of jobs.[14]

12. Jim Puzzanghera, "FHA to get $1.7 billion in its first taxpayer-funded bailout," Los Angeles Times, Sept. 28, 2013. http://articles.latimes.com/2013/sep/28/business/la-fi-0928-fha-bailout-20130928

13. Statement of Brian Duperreault, "The Terrorism Risk Insurance Program," Senate Banking Committee, April 14, 2005. http://www.gpo.gov/fdsys/pkg/CHRG-109shrg29806/html/CHRG-109shrg29806.htm

14. Statement of Roger Ferguson, "The Need to Extend the Terrorism Risk Insurance Act," House Financial Services Committee, March 5, 2007. http://www.gpo.gov/fdsys/pkg/CHRG-110hhrg35288/html/CHRG-110hhrg35288.htm

SYSTEMIC RISK IN THE RESIDUAL MARKETS

What the recent market experience with financial guaranty, mortgage guaranty and terrorism insurance all show is that there are risks borne by the P&C insurance industry that radiate outward into the broader economy. Should such risks ultimately be concentrated in too few hands, or into structures that are too interconnected, there are potential events – whether they be massive catastrophes or more traditional financial risks – whose impact on the P&C industry would be felt by businesses, lenders, investors, workers and taxpayers. This applies not only to coverage provided by private market insurers, but also – perhaps especially – to that P&C protection sold by state-sponsored or quasi-governmental insurers.

In the United States, such protection is offered primarily through state-sponsored "residual market" mechanisms for insureds who cannot find coverage in the private market. While all 50 states do sponsor residual market entities for auto insurance, with the exception of North Carolina – where such policies constitute more than 20 percent of the market – residual market auto insurance mechanisms do not account for a substantial portion of policies sold. Moreover, because auto insurance claims trends are fairly stable over time and because the market has relatively little connection to broader economic trends, we do not see it as a potential source of systemic risk.

More troubling are state-run entities in the property insurance market. Thirty states and the District of Columbia operate what are called Fair Access to Insurance Requirements plans for homeowners who cannot find coverage in the private market. In addition, five states sponsor specialized pools for coastal windstorm risks, typically called "beach plans." Mississippi, North Carolina and Texas operate both FAIR plans and wind pools, while Alabama and South Carolina only operate wind pools. Florida and Louisiana sponsor state-run insurance companies that serve both the coastal and FAIR plan markets, while California sponsors a privately financed pool solely to cover earthquake risk.

FAIR plans were originally created primarily to serve urban consumers, particularly in areas where "redlining" practices made it difficult for lower-income homeowners to obtain coverage. As with auto insurance residual markets, in most states, FAIR plans remain quite small. However, spurred on by state-level regulation of insurance rates, which prohibit insurers from charging what would otherwise be market-clearing prices, a handful of states' residual property insurance markets have grown enormously, promptinghuge increases in the total loss exposure of state-sponsored insurance mechanisms overall. According to the Property Insurance Plans Service Office (the trade association for FAIR Plans), total exposure of the nation's FAIR and beach plans nearly doubled from $419.5 billion in 2005 to $818.1 billion in 2012 and has surged by 1,396 percent since 1990.[15]

The largest state-controlled entities, such as Florida's Citizens Property Insurance Corp., operate as a direct competitor to private market insurers. In fact, thanks largely to legislative changes enacted in 2007 that made it significantly easier for Floridians to qualify for Citizens coverage, the company now ranks as the largest homeowners' insurer in Florida and one of the largest in the United States. Other entities – like Louisiana Citizens Property Insurance Corp., the Texas Windstorm Insurance Association and the California Earthquake Authority – are likewise significant competitors,

FIGURE 2: LARGEST RESIDUAL PROPERTY PLANS

Plan	2011 market share (%)	2012 market share (%)
Citizens Property Insurance Corp. (Fla.)	14.28	13.69
Massachusetts Property Insurance Underwriting Association	7.28	6.85
Texas Windstorm Insurance Association*	5.20	5.05
North Carolina Insurance Underwriting Association*	3.99	4.24
Louisiana Citizens Property Insurance Corp.	5.07	4.15
Rhode Island Joint Reinsurance Association	3.86	3.59
Mississippi Windstorm Underwriting Association*	2.58	2.59
Alabama Insurance Underwriting Association	1.55	1.58

Source: PIPSO
**Includes market share of state FAIR plan.*

One aspect of residual market plans that deserves particular attention is their heavy reliance on post-event funding mechanisms to cover shortfalls in their claims-paying ability. While private insurers must accrue sufficient statutory surplus to write business, set aside case reserves to pay claims and purchase reinsurance to cover potential catastrophic losses, most residual market entities rely heavily on *post hoc* borrowing as sources of liquidity following a major event. The loans taken out by these entities are then serviced over time using funds raised by assessments on private market insurers, which then typically pass on those charges to consumers.

It isn't that residual markets fail to set aside any reserves or purchase any reinsurance. Indeed, all five of the beach plans reinsured a portion of their business in 2012, as did Florida Citizens, Louisiana Citizens, the California Earthquake Authority and the FAIR plans in California, Georgia, Kentucky, Massachusetts, New York, North Carolina, Rhode Island, Texas and Virginia. But having the statutory authority to lay off risk onto the private market, combined with political pressures to keep rates low, means that the temptation to operate with insufficient upfront claims-paying ability often proves irresistible.

Florida offers an illustrative and particularly troublesome example of the perils of post-event funding. In addition to sponsoring Citizens, which writes roughly 14 percent of the state's homeowners insurance, Florida also sponsors the Florida Hurricane Catastrophe Fund, the only state-run general purpose P&C reinsurer in the country. Importantly, the Cat Fund does not transfer any of its risk to the private markets through reinsurance or catastrophe bonds, but instead concentrates it all within the State of Florida. Every property insurer doing business in the state must purchase a mandatory layer of coverage from the Cat Fund, which has $17.002 billion of potential obligations for the 2013-14 hurricane season for a single event. In the advent of a year with multiple storms, as occurred in 2004 and 2005, the Cat Fund's obligations would be a multiple of that limit..

For several years in a row, the Cat Fund's financial advisor projected that, even with its authority to borrow funds following a major hurricane, it would not be able to meet all of its obligations, because there simply wouldn't be sufficient capital markets appetite for the size bond issuance the Cat Fund would need. For the 2013-2014 season, the Cat Fund appears relatively more capable of meeting its basic obligations, according to advisor Raymond James & Associates. However, even under these improved scenarios, the Cat Fund may not be able to perform in a timely enough manner to meet the liquidity needs of all the participating carriers (the formal estimates assume a considerable time to purse the bond financing, as noted below). Moreover, should one or more hurricanes exhaust the fund's $17 billion in obligations next year, the Cat Fund's claims-paying capacity the following year would fall about $9.2 billion short of its potential obligations.[16]

Some analysts suggest even those estimates are optimistic, as they assume the fund would be able to find takers for up to $6.1 billion of bonds in the first year and $5.7 billion in a subsequent season. Moreover, to finance its bond obligations, the fund would need to assess up to $3.62 billion of post-storm hurricane taxes on nearly every policy in the state every year until it paid down its debts. In an October 2011 report, Goldman Sachs noted that, in light of a consistently underperforming municipal bond market, the Cat Fund "should be modest in its market capacity expectations at this time."

15. Property Insurance Plans Service Office, "PIPSO Reports – 2013," June 2013.

16. Shelly Sigo, "Florida Cat Fund Should Rely Less on Debt to Pay Claims," Bond Buyer, Oct. 16, 2013. http://www.bondbuyer.com/issues/122_200/florida-cat-fund-should-rely-less-on-debt-to-pay-claims-1056532-1.html

In a maximum loss scenario, the FHCF also does not have the ability to pick an optimum structure for the market, since the 6% assessment cap puts a limit on annual debit service and would force a significant amount of the issue into the long end of the municipal curve, where there is the least amount of investor demand.[17]

What is notable about the structure of Florida's market is that, in the event of a sufficiently large hurricane, both Citizens and the Cat Fund would need to levy assessments on private insurers, even as those private insurers would face their own solvency challenges. According to the Florida Office of Insurance Regulation, a direct hurricane event of $26.3 billion, for which there is a 3.3 percent probability in any given year, would take a $3.9 billion hit on the surplus of Citizens.[18] Citizens would then levy surcharges of up to 15 percent a year for three years on its own policyholders, as well as regular and emergency assessments on nearly every P&C insurance policy in the state until all claims were paid. An event of that size also would cause a shortfall of 20 to 25 percent in the Cat Fund's claims-paying capacity, which FLOIR estimates would cause 24 of the top 50 insurers – representing 2.2 million policies, or roughly 35 percent of the market – to fall below the minimum statutory surplus of $5 million. Exacerbating the problem further, like 49 other states, Florida maintains a guaranty fund – the Florida Insurance Guaranty Association – tasked to step in and cover at least a portion of the claims owed by insolvent insurers, once the insurer's own assets have been liquidated. To fund those operations in the wake of a major hurricane, FIGA would, just like Citizens and the Cat Fund, levy assessments on private homeowners insurers.

The problem is eminently clear. An event large enough to exhaust the Cat Fund will be large enough to test the solvency of many private insurers. As insolvencies mount, the demands on FIGA will likewise grow. Private insurers would be hit doubly hard should there be any shortfall in the Cat Fund's ability to pay its claims. Citizens, likewise, would face a big hit to its surplus and it, too, purchases a majority of its reinsurance from the Cat Fund. Each of these entities relies for its funding on market-share based assessments on the very same, weakened private insurance market. While these assessments can be made over time, and states have latitude to exempt particularly troubled insurers from undue assessments, this interconnected nexus of assessments raises the risk of "cascading insolvencies," as a smaller and smaller assessable base of private insurers to bear the burden of larger and larger shortfalls.

We believe this nexus raises a question of excessive interconnectedness that must be analyzed as a source of potential systemic risk, with the potential to bleed over into other segments of the financial services industry and the broader capital markets. Given the size of Florida's real estate market, a major event that tests the ability of its public and private insurers to meet their claims obligations could have ripple effects for lending institutions, as well as for holders of mortgage-backed securities issued either by the GSEs or by private label investment banks.

Of the state residual markets, the situation in Florida is by far the most acute. Florida's state residual markets have retained the highest absolute level of risk of any comparable regime in the world (considering event frequency, severity and insured values) while maintaining the relatively lowest levels of risk transfer. According to the Insurance Information Institute, Citizens alone accounts for 68 percent of the total FAIR Plans' exposure to loss; the total is higher if the Cat Fund is included. Moreover, of the 2.6 million total policies (habitational and commercial) insured by the FAIR Plans in 2012, 1.6 million were written by Citizens.

However, residual market risk, and latent systemic risk, have been growing nationwide. Per the Insurance Information Institute, total policies in-force (both habitational and commercial) in these mechanisms have more than tripled from 931,550 in 1990 to 3.23 million in 2012, and total exposure to loss in the plans surged from $54.7 billion in 1990 to $818.1 billion in 2012—an increase of 1,396 percent. Funding sources for these exposures within the plans have not grown at this pace. There is currently no regulatory oversight of the broader systemic risk these plans pose to insurance markets, financial markets, homeowners or consumers more broadly.

SHAKING UP THE GSES

While Fannie Mae and Freddie Mac could face significant risk if a major hurricane caused Florida's property insurance market to collapse, hurricanes are not the biggest natural catastrophe threat the GSEs face. Rather, in a sense, the GSEs are themselves among the biggest P&C insurers in the country, as they willingly bear roughly $130 billion of earthquake risk.

Fannie Mae and Freddie Mac lie at the heart of the U.S. housing system. Created by Congress in 1938 and 1970, respectively, the two firms together own or guarantee more than half of all outstanding mortgages in the country. As of year-end 2012, Fannie Mae's total book of business was $3.2 trillion[19], while Freddie Mac's was $1.8 trillion.[20]

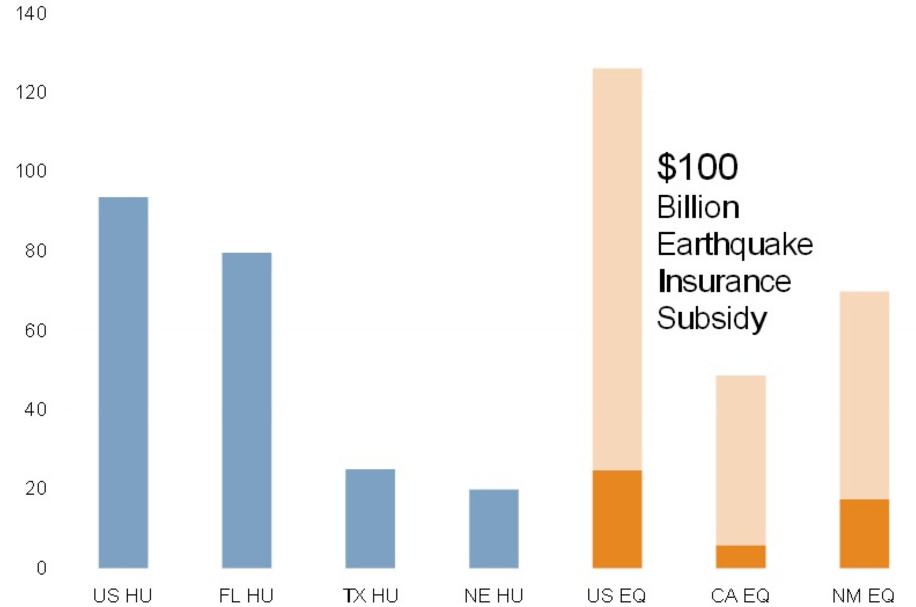
17. Goldan, Sachs & Co., "Florida Hurricane Catastrophe Fund Bonding Capacity Analysis," Oct. 10, 2011.

18. Kevin McCarty, "Letter to Sen. J.D. Alexander," Jan. 25, 2012

19. Press release, "Fannie Mae Reports Largest Net Income in Company History," Fannie Mae, April 2, 2013. http://www.fanniemae.com/resources/file/ir/pdf/quarterly-annual-results/2012/q42012_release.pdf

20. Investor presentation, "Freddie Mac Update," Freddie Mac, November 2013. http://www.freddiemac.com/investors/pdffiles/investor-presentation.pdf

FIGURE 3: THE FANNIE AND FREDDIE INSURANCE SUBSIDY



Source: Data Impact Forecasting, Analysis by Aon Benfield

But Fannie Mae and Freddie Mac also represent significant exposure for U.S. taxpayers. With mortgage default losses mounting, the entities were taken into conservatorship by the federal government in August 2008 and were each extended capital commitments of up to $200 billion by the U.S. Treasury. The Treasury thus far has spent $154 billion supporting operations of the GSEs, which now are supervised directly by the FH FA.

While there are signs the GSEs are slowly working through their troubles, limiting their draw-downs from the Treasury and actually returning dividends to the government, macroeconomic variables are not the only risks Fannie and Freddie face. Thanks to a unique exception in the rules governing which mortgages the GSEs are allowed to assume, they both face the risk that billions of dollars in value could literally come crashing to the ground in an instant.

Under the rules for qualified mortgages promulgated by the FHFA, mortgages purchased or guaranteed by the GSEs must have and maintain property insurance coverage for most standard perils— including fire, windstorm, hail, smoke, explosions, theft, vandalism, civil commotion and riots— and where the property is included in a 100-year floodplain, they must have coverage from the National Flood Insurance Program. However, despite the enormous destructive power of seismic events, there is a unilateral loophole when it comes to insurance for earthquake risks.

This is, to put it charitably, a significant oversight. Based on U.S. Census estimates for 2012, there are at least 66 million Americans who live in metropolitan statistical areas identified by U.S. Geological Survey as facing elevated earthquake risk. This includes not only those cities that have seen significant earthquake events in the recent past, like Los Angeles and San Francisco, but also places as disparate as St. Louis, Seattle, Las Vegas, Honolulu, Memphis, Salt Lake City, and Charleston, S.C. Indeed, because many of these cities haven't seen significant earthquake damage in recent times, local building codes are less likely to require the kinds of seismic retrofitting that serves to mitigate earthquake risk in California.

The lack of any requirement by the GSEs to purchase earthquake insurance has had a notable effect on take-up rates. In California, where most earthquake coverage is provided by the California Earthquake Authority, only about 12 percent of eligible property owners purchase earthquake coverage.[21] This is despite predictions from the USGS that, over the next 30 years, there is a 99.7 percent chance of a magnitude 6.7 earthquake (equal in strength to the 1994 Northridge quake) and a 46 percent chance of a magnitude 7.5 earthquake, which would be 45 times stronger than Northridge.[22]

For the GSEs, the result is that, in the event of a major earthquake, there would be no insurance to recover on most of the properties that serve as security for the mortgages held by Fannie and Freddie. The USGS estimates a 7.8 southern

21. Chris Hackett, "Letter to Federal Insurance Office," Property Casualty Insurers Association of America, June 24, 2013. http://www.pciaa.net/web/sitehome.nsf/lcpublic/379/$file/PCI_Comments_FIO_Nat_Cat_062413.pdf

22. Southern California Earthquake Center, "Uniform California Earthquake Rupture Forecast (UCERF)." http://www.scec.org/ucerf2/

California quake on the San Andreas Fault could produce $200 billion in damage, and much of that would be uninsured.

In an August 2011 report to the Federal Reserve Bank of Atlanta, reinsurance broker Aon Benfield noted that if the GSEs required earthquake coverage, it would be the single largest insured catastrophe peril in the United States, dwarfing all hurricane risks combined.[23] To transfer the risk of a 1-in-250 year earthquake, of which there is a 0.4 percent probability in any given year, would cost the GSEs roughly $30 billion. From this, Benfield concludes U.S. taxpayers currently are providing a $100 billion subsidy to the GSEs for the cost of their earthquake risk.

The GSEs also face an as-yet unquantified amount of exposure to uninsured flood risk. Despite requirements that conforming mortgages must be covered for flood, enforcement has been notoriously spotty. The Wharton Risk Center found after Hurricane Sandy that , even in coastal New York communities, take-up rates topped 30 percent in only a few zip codes.[24] Given the NFIP's $1.27 trillion of exposure from its 5.5 million policies, that suggests as much as $2.6 trillion of uninsured exposure.

CONCLUSION

Hundreds of billions of dollars of risks that are fully insurable by the private market currently sit on the balance sheets of taxpayer-backed, government-sponsored entities at the state and federal level. If one includes the National Flood Insurance Program and Federal Crop Insurance Corp. – both of which are outside the scope of this paper – the figure reaches into the trillions.

There is another way, and it's a path already well-trod by the nation of New Zealand. Though faced with significant earthquake, wildfire and flood risks, New Zealand has pioneered moving significant tranches of risk from its state-sponsored insurance entities to private reinsurers. In fact, after the Christchurch earthquake in early 2011, $6 billion of reinsurance recoverables from global reinsurers helped push New Zealand into its first annual current account surplus since 1973.[25]

Transferring U.S. risk to the global markets, where it can be more effectively priced and spread, offers similar promise here. Such a move would not only better insulate state and federal budgets from catastrophic losses, it also would dissipate the potential for systemic risk to the global economy.

ABOUT THE AUTHOR

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