

Mr. Brynjolfsson

Mr. Brynjolfsson is employed by PIMCO, an investment advisor that actively manages over \$270 billion of primarily fixed income investments on behalf of U.S. and global pension plans, mutual funds, central banks and other entities.

He is an Executive Vice President, Portfolio Manager and manager of the PIMCO Real Return Bond Fund. He directly oversees over \$9 billion in client assets. In addition, he is PIMCO's risk-linked securities specialist. Mr. Brynjolfsson joined the firm 13 years ago. He holds a bachelor's degree in Physics and Mathematics from Columbia College, 1986, and a master's in Finance and Economics from the MIT Sloan School of Management, 1989.

PIMCO and Risk-Linked Securities

PIMCO has been investing in Risk-Linked Securities since June 1997. Its substantial presence in this market is a result of its ability and appetite to buy Risk-Linked Securities tactically on behalf of clients who have authorized it to invest in such securities. Typically allocations to these client accounts are made in very small percentages, targeted at less than 1% per peril, across a very large base of approximately \$100 billion of assets authorized to invest in Risk-Linked Securities. This results in very substantial potential capacity of \$1 billion per peril. Currently PIMCO has \$375 million invested in risk-linked securities across various perils, including Florida Wind and California Quake.

Introduction and Recommendation

I welcome this opportunity to share my experiences, insights, expertise and recommendations with the U.S. House of Representatives Committee on Financial Services. This testimony is offered in my capacity as an individual with extensive experience relating to Risk-Linked Securities, and not in my official capacity as an officer of PIMCO.

I believe that the Risk-Linked Securities market holds great promise for your constituents, and our nation more generally. I therefore am strongly supportive of your efforts to foster the unfettered development of this market.

Risk-Linked Disclosure

Of course, there is no such thing as a healthy market without full disclosure, so I would like to begin my testimony by sharing with the members here the disclosure PIMCO provides to its investors regarding Risk-Linked Securities, or what I refer to as Event-Linked bonds.

Please do not be startled. Like investors, I want each of you to be aware of the risks of event-linked bonds.

“Each Fund (except the Money market Fund) may invest in ‘event-linked bonds’, which are fixed income securities for which the return of principal and payment of interest is contingent on the non-occurrence of a specific ‘trigger’ event, such as a hurricane, earthquake, or other physical or weather-related phenomenon. Some event-linked bonds are commonly referred to as ‘catastrophe bonds.’ If a trigger event occurs, a Fund may lose a portion or all of its principal invested in the bond. Event-linked bonds often provide for an extension of maturity to process and audit loss claims where a trigger event has, or possibly has, occurred. An extension of maturity may increase volatility. Event-linked bonds may also expose the Fund to certain unanticipated risks including credit risk, adverse regulatory or jurisdictional interpretations, and adverse tax consequences. Event-linked bonds may also be subject to liquidity risk.”

Questions

Mr. Tom McCrocklin forwarded me six questions. Committee members might be interested in my answers to these questions.

Question 1: What aspect of catastrophe bonds are attractive to investors?

Risk-Linked Securities can provide PIMCO with a handsome yield in exchange for absorbing a small amount of risk. There is no need to make this too complicated so I'll just give you an example.

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Five years ago, in 1997, and every year since, PIMCO has participated in a transaction known as Residential Reinsurance. This Risk-Linked Security allowed USAA, one of the nation's largest insurers of military personnel, to cede \$400 million of super-catastrophic hurricane risk stretching from Texas to Maine to the capital markets, for a period of 1 year covering the 1997 hurricane season. PIMCO purchased 17% of that transaction, representing \$69 million of catastrophic risk.

For each \$100 I invested I received almost \$5.76 plus interest. Now of course, part of the reason I am sitting here is because there were not any major catastrophic wind events in 1996. However, more seriously, PIMCO was careful to quantify what risks of this transaction.

In particular, the Risk-Linked Security I bought was only exposed to the most catastrophic of hurricanes. The legal definition of this risk was of course detailed, but an example would be a Category 5 Hurricane making landfall and passing directly over Miami, where a large number of retired and active military personnel reside.

In contrast, a category 4 Hurricane passing 20 miles south of Miami, as Hurricane Andrew did in 1993, would not have triggered a loss, despite \$23 billion of industry losses.

In the case of Residential Reinsurance, sophisticated third party risk modeling entities confirmed our analysis of the risk, and in fact quantified the risk of loss on the USAA bonds as less than once in one hundred years on average.

Question 2: What factors have limited your investment in catastrophe bonds?

PIMCO's involvement in the Risk-Linked Securities market has been very substantial, perhaps more substantial than any other single capital markets investor.

As an investment manager, I do face some inevitable, and in some cases appropriate limits. Prudence and my fiduciary duty is first and foremost in my mind at all times, and appropriately restricts me from haphazardly investing large percentages of clients' "generic" bond mandates in Risk-Linked Securities. Other limits include restrictions on issue, issuer and industry concentrations. Also, I strive to comply with an internally imposed goal of no more than 1% exposure to any single peril.

However market development among my competitors would have ancillary benefits for us, and I support such development.

PIMCO and its competitors will mold what could legally be defined as standards of practice in the industry. PIMCO is known as a successful innovator. However, despite extensive and explicit disclosure, we are also at risk of becoming a lightning rod for criticism upon the first loss-making event in the Risk-Linked Securities market. Therefore, we have employed a cadre of attorneys and risk assessment specialists and

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have worked closely with clients, regulators, investment bankers and reinsurance companies to develop this market.

Of course, bringing competitors into the market is primarily the role of investment banks that distribute Risk-Linked Securities to the capital markets. However, in order to facilitate their efforts, I have personally traveled around the world. I have even gone as far as presenting to groups of my competitors at conferences hosted by, for example, my co-panelist the Bond Market Association.

Question 3: Discuss the appropriateness or suitability of catastrophe bonds for individual investors or mutual funds that would be purchased by individual investors?

The Risk-Linked Securities Market is by no means appropriate for the direct participation of anyone except the most sophisticated investor. Generally all Risk-Linked Securities issued in the U.S. have been issued under the framework of Regulation 144A that limits participation to “Qualified Professional Asset Managers.”

Individuals can, and do, however, appropriately access the Risk-Linked Securities markets, in very small doses, through broadly diversified mutual funds managed by competent professionals. I would put investors in the mutual funds that I manage in this category. For example the PIMCO Real Return Fund holds over \$6 billion in assets, and includes perhaps \$100 million of catastrophe bonds.

I have a number of credentials that enable me to contribute to the process of evaluating Risk-Linked Bonds for PIMCO. I have undergraduate degrees in both Physics and Mathematics from Columbia College. In addition, I studied under the direct attention of two Nobel prize-winning, and a number of other gifted finance theorists at MIT’s historic department. Complementing my theoretical training, I have now worked under the direct attention of the legendary fixed income investor Bill Gross for 13 years. In this capacity I have directly witnessed, from what I might call the eye of the storm, many of the largest capital market events of the last decade.

Still, however, I would not contemplate participating in the Catastrophe Bond market as an isolated individual. Without my colleagues, many of whom have PhD’s in the physical sciences or capital market experience comparable to my own, without the staff of in-house and outside attorneys and other professionals supporting my efforts, without connections in the investment banking and reinsurance industry, I would be unqualified to invest in RLS.

Of course, one of the most important factors that any mutual fund manager would have to take into account in deciding whether or not to invest in risk-linked securities is whether they possess sufficient expertise to analyze the risks of those securities, in order to be able to weigh the risks versus the returns. As I indicated, my colleagues and I at PIMCO do have the necessary expertise. However, some fund managers may well conclude that the costs of hiring or training personnel with the requisite expertise would not be justified, given the specialized nature of these securities.

Question 4: What is your prognosis for the future of risk-linked securities including catastrophe bonds and options?

I would suggest the Risk-Linked Securities market is currently struggling to get any notice whatsoever. This is temporary.

In particular, at this very moment the capital markets are in turmoil. Major airlines, automobile companies, energy companies, finance companies and others are struggling to get new financing, or even roll-over their existing debt that is coming due. As some of you may know, even FNMA's debt has recently been experiencing a widening of its spread to benchmarks. Meanwhile investors fear that capital already lent may not be repaid and are hesitant to lend more regardless of the tempting high levels of current corporate bond yields.

Given the compelling advantages of securitizing catastrophic event risk, and efficiently distributing these securities through capital market channels, I am highly confident that the Risk-Linked Securities market will continue, and perhaps accelerate the substantial growth it has experienced over the past 5 years, despite the current turmoil in the corporate bond market.

Question 5 What factor would accelerate the growth of risk-linked securities?

Ultimately it is incumbent upon capital market professionals to educate themselves and appreciate the fruits that Risk-Linked Securities have to offer their constituents. However, in the meantime, I would suggest this committee can best serve its constituents firstly by not standing in the way of market evolution, and secondly by promoting market development through a streamlining of regulation, taxation and legal liability associated with participating in the Risk-Linked Securities market. Educational efforts such as today's hearing will go a long way towards promoting market efficiency.

Question 6: What factor would discourage the use of risk-linked securities?

Obviously the number one concern about investing in Risk-Linked Bonds is, and should be, evaluating the risk of disasters occurring. Unfortunately I believe it is beyond the authority of this committee to legislate away Hurricanes, Earthquakes and other disasters. However, more seriously, another risk relates to potential losses due to ambiguous or adverse regulatory, tax or fiduciary treatment. Certainly it is healthy for us to be careful and fully and explicitly disclose to investors the risk of investing in Event-Linked bonds. However, that fear should not be overwhelming, and for example, should not be so overwhelming as to exclude my competitors from self-assuredly entering the market.

Beneficiaries

Before I conclude allow me to more concretely and specifically highlight for you how I think the development of the Risk-Linked Securities market will directly or indirectly impact your constituents

Firstly, the Risk-Linked Securities market has the potential to substantially and dramatically increase the capacity and lower the cost of capacity in the reinsurance market. This is particularly true in the case of capacity relating to “Super Catastrophic Risks” those “once in a hundred year” events that inevitably occur, and fill the pages of “Life” magazine and the like. Increasing this capacity frees up the limited capacity of reinsurance companies to address more complex risks, for example, risks associated with terrorism. Ultimately of course this benefits consumers, both individuals and small businesses.

Your constituents may benefit a second time when they have an opportunity to indirectly participate in the premiums the insurance industry garners through their pension-plans, mutual funds and other investment vehicles managed by Qualified Professional Investors, under Regulation 144A.

Such pooling of individual catastrophic risk and premiums across society very broadly is of course the essence of the concept of a mutual insurance company. In principal it extends much more broadly to the whole insurance industry through the RLS market.

You may wonder whether anyone is hurt by development of this market. Perhaps, however, I don't know whom. I believe the RLS market is one of those elusive, but much talked about, win-win situations that can make the world a better place. For example, the Risk-Linked Securities market operates strictly at the wholesale level, so local insurance agents and primary insurance markets are helped, and will likely appreciate the lower wholesale premiums they will consequently have access to. Reinsurers likewise, seem to welcome the off-loading of capacity, particularly in those types of risk that are most difficult to diversify and most catastrophic.

One last, yet often maligned constituent is the IRS, whose revenues have the potential to benefit from the development of a robust, RLS market. Whether Special Purpose Reinsurance Vehicles are domiciled on-shore, or offshore, premiums traditionally earned by distantly domiciled insurance companies will begin to be earned instead by tax paying, mutual fund shareholders and pensioners who are receiving or accruing the income.

Conclusion

I am strongly supportive of any efforts this committee may undertake to lower barriers to development of the Risk-Linked Securities Market. In addition, I am strongly supportive of any efforts to encourage understanding and foster prudent use of Risk-Linked Securities. I support efforts to enhance market efficiency by promoting increased

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transparency and risk disclosure. I am supportive of efforts to streamline regulation, reduce taxation, and enable on-shore domiciling of Special Purpose Reinsurance Vehicles. I am supportive of efforts to standardize, unify, rationalize, and codify the fragmented nature of State Insurance Regulatory involvement of Risk-Linked Securities markets. I am supportive of restrictions that limit use of Risk-Linked Securities to “Qualified Purchasers” who have the ability to analyze the complexity of Risk-Linked Securities and the wherewithal to suffer losses. I am supportive of efforts that solidify the contractual nature of Risk-Linked Securities and eliminate legal technicalities, or legal exceptions, as a source of risk for those who are ceding or receiving premiums.

Thank you for your interest. I am, of course available this afternoon, to answer any questions you may have.

Full Authority Management Style

EVENT-LINKED BONDS

Overview

Event-linked bonds allow insurance companies to sell some of their event risk (risk of insured damage from natural disasters) to investors through the financial markets. Traditionally, insurance risk has been bought and sold by reinsurance companies. However, the development of quantitative techniques to effectively model natural disasters as well as an increased understanding of these risks by investors has led to the emergence of a market that allows insurance companies to sell these risks to investors such as PIMCO. Event-linked bonds have excellent diversification characteristics and pay relatively high yields.

What are the Risks in Event-linked Bonds?

Event-linked bonds have special provisions requiring investors to forgive or defer some or all payments of interest or principal if insured losses from a catastrophic event surpass an agreed-upon amount, or loss limit. A catastrophic event is a low-probability natural disaster, such as an earthquake, hurricane, or flood which causes severe property damage. The loss limit associated with such events is usually expressed in terms of a dollar level of losses due to a specific type of natural disaster in a specific region and, sometimes, during one or more specific seasons. For example, a hurricane in Florida must result in insurance claims of more than \$1 billion to a specific insurance provider (not in total) to trigger a loss of principal. The loss limit can also be expressed in terms of a dollar index of catastrophic losses for the industry, the two most popular of such indices being those developed by Property Claims Service (PCS) and Guy Carpenter. Only events that exceed or “trigger” the loss limit and that occur prior to maturity are considered loss events for the bonds. If no event occurs, the bonds pay coupons and return principal the way other debt securities do.

When a natural disaster does occur, triggering costs above the loss limit, the insurer can pay claims with the bond proceeds that otherwise would have gone back to investors. In other words, the insurer borrows money to increase its reserves that are used to pay out claims in the case of a natural disaster.

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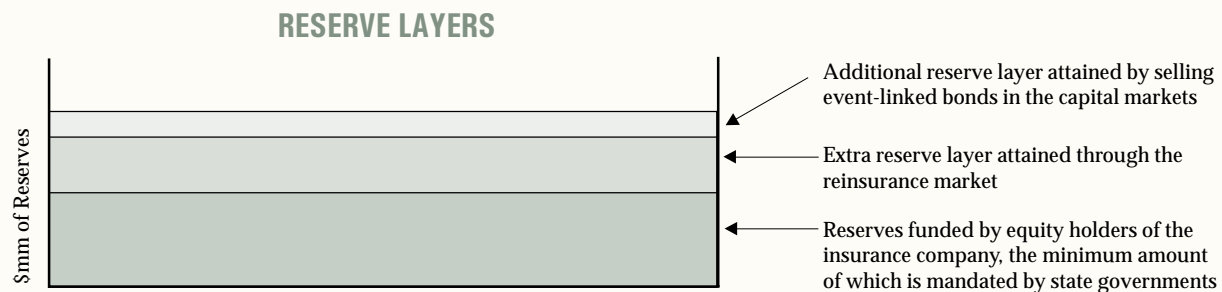
WHY INVEST IN EVENT-LINKED BONDS?

Event-linked bonds increase returns per unit of volatility by adding diversification to a larger portfolio. These bonds have excellent diversification characteristics because they have little or no correlation to other financial instruments. Because of the low-frequency, high-severity risk, diversification benefits are significant with event-linked bonds. In addition, event-linked bonds offer high returns compared to similarly rated corporate bonds. To date, no event-linked bond has suffered an actual loss of principal.

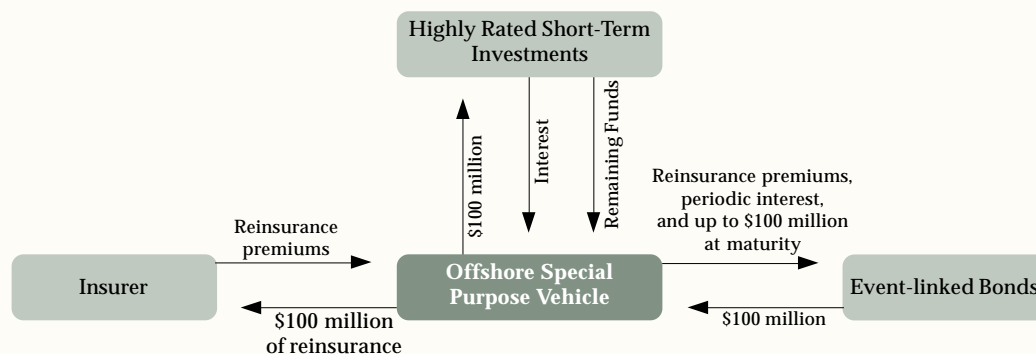
Structure

As shown in the chart below, insurance companies can add reserves (remove insurance risk) by buying reinsurance from another insurer and by selling risk in the form of an investment security. Event-linked bonds perform the latter function of transferring risk to investors through **financing transactions** or **risk-transfer transactions**. In a **financing transaction**, investors exchange cash for bonds only if an event occurs causing losses greater than the loss limit. These bonds must be repaid over time. Thus, the investor loses no principal, but risks the opportunity cost of having to deliver cash when an event occurs.

More common, however, is the **risk-transfer transaction** in which the investor purchases bonds with pre-determined event-linked payments before an event occurs. Usually, a special-purpose vehicle or trust acts as the reinsurer by issuing debt in the capital markets and providing a reinsurance policy to the insurer. The proceeds from the sale of the securities are held in a trust and invested in highly rated, short-term investments such as T-bills. These trust funds are available to cover claims only if a trigger event occurs causing losses greater than the loss limit. Then, the short-term investments in the trust are sold and the T-bill collateral that would otherwise have gone to the investors is used to pay the insurance claims. Thus, the investor may lose



SAMPLE RISK-TRANSFER TRANSACTION STRUCTURE – \$100 MILLION OF EVENT-LINKED BONDS



principal with an event-linked bond. If there is no event loss, the trust pays the initial premium received from the insurance company, along with interest, to investors and returns full principal at maturity.

Event-linked bonds can be designed to cover a specific layer of loss in an insurer's book of business, such as those insured losses over \$1 billion, but under \$1.5 billion. Low layers are those that are triggered frequently, while high layers are those that occur relatively infrequently since there is only a small probability that losses would exceed the higher loss limit. Most event-linked bond transactions are offered at relatively high layers of protection, which translates into low probabilities of loss for investors. Thus, event-linked bonds provide protection for low-frequency, high-severity losses. Defaults are infrequent but recoveries are expected to be low.

Pricing

The pricing of event-linked bonds is based on probabilities derived from historical data on storms, earthquakes, etc. In most cases, modeling firms, or actuaries, compare data on the natural disasters that are being covered in order to develop the probability of an event and the expected loss. The ratings agencies perform similar analysis for each event-

linked bond and assign a rating that reflects the probability of loss. This rating is conceptually the same as a rating on a corporate bond because the rating indicates the probability of loss of principal based on historical experience. For example, BB-rated corporate bonds (high yield) and BB-rated event-linked bonds both have a probability of loss around one percent, although the underlying risk exposures are very different. In spite of this, event-linked bonds offer a significant increase in yield over similarly rated corporate bonds.

Market Liquidity

In the four years prior to 2000, \$3.6 billion of event-linked bonds were issued, primarily by insurers and reinsurers seeking protection against losses from natural disasters. Accordingly, event-linked bonds are sometimes referred to as catastrophe or "CAT" bonds. According to Goldman, Sachs & Co., the average secondary volume for these bonds is 40 percent of primary issuance. As issuance of this type of security continues to pick up, the secondary market will become more liquid. In the first half of 2000, there was \$350 million of such issuance with several transactions in the pipeline. Most of the risks securitized so far have been natural disaster risks, but motor risk, life insurance risk and credit risk also have been taken to the capital markets.

Past performance is no guarantee of future results.

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Event-Linked Bonds

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P I M C O



Biographical Information

Mr. Brynjolfsson is an Executive Vice President, Portfolio Manager and manager of the PIMCO Real Return Bond Fund. He joined the PIMCO 12 years ago, having been previously associated with Charles River Associates and JP Morgan Securities. He has 15 years of investment experience, and holds a bachelor's degree in Physics and Mathematics from Columbia College and a master's in Finance and Economics from the MIT Sloan School of Management.

P I M C O



Investment Considerations

Event-Linked Bonds are Similar to High Yield Corporate Bonds

Both:

- ◆ Earn a Substantial Excess Yield
- ◆ Experience Occasional Principal Loss
- ◆ Demand Expert Analysis



Investment Considerations

<u>Event-Linked Bonds</u>	<u>High Yield Corporates</u>
◆ Scientific Equipment	◆ Financial Reporting
◆ Geologic and Meteorological Events	◆ Economic and Managerial Accidents
◆ Excellent Internal and External Diversification	◆ Little Diversification

P I M C O



Client Considerations

“Sensitivity”

+

“Disclosure”

+

“Regulations”

P I M C O



Value: LIBOR SPREAD/EXPECTED LOSS

- ◆ 5X to 10X BB
- ◆ 10X + for BBB
- ◆ Single vs. Multi
- ◆ Region: Capacity and Familiarity

P I M C O



Simplicity + Clarity + Integrity

- ◆ Structure of Bond Issue
- ◆ Objectives of Ceding Insurer
- ◆ Macro- “Super Cat” Exposure

P I M C O



Structure + Legal

- ◆ Indemnity, Index, “Model”
- ◆ Collateral/Guarantees and Form of Trust

P I M C O



PIMCO's/Capital Market's Role:

- ◆ Super CAT

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Client Education/Tactical Use

- ◆ PIMCO Funds Prospectus
- ◆ Written explicit Disclosure

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