**Carlo Alberto Medal**

[Dr Kamal Monnoo](https://nation.com.pk/authorpost/columnist/dr-kamal-monnoo-columnists/)

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Just to take a break from the mayhem at home, would like to celebrate the recent achievements of Stefano Giglio, a professor of finance at my Alma Mater, the Yale School of Management, whose work explores the impact of climate change on financial markets, won the Carlo Alberto Medal last month for his research in the field of economics. Professor Giglio’s contribution to spreading economic knowledge amongst young aspiring minds in fact dates much back than his tenure at the Yale SOM. He has been a member of the Yale School of Management faculty since 2017. Basically, he proposes a new methodology to build portfolios that hedge climate change risks. His quantity-based approach explores how mutual funds holdings change when the fund adviser experiences a local extreme heat event that shifts beliefs about climate risks. He uses the observed trading behaviour to predict how investors will reallocate their capital when “global” climate news shocks occur, which shift the beliefs and asset demands of many investors simultaneously and thus move equilibrium prices. In essence, showing that a portfolio that holds stocks that investors tend to buy after experiencing a local heat shock appreciates in value in periods with aggregate climate news shocks. Our quantity-based approach yields superior out-of-sample hedging performance compared to traditional methods of identifying hedge portfolios. The key advantage of the quantity-based approach is that it learns from cross-sectional trading responses rather than time-series price information, which is limited in the case of climate risks. He also demonstrates the efficacy and versatility of the quantity-based approach by constructing successful hedge portfolios for aggregate unemployment and house price risk.
Established in 2007 by the Collegio Carlo Alberto, a private research and teaching institution in Northern Italy, the Carlo Alberto Medal seeks to inspire young Italian economists to “pursue their research activity with renewed commitment.” Every year, the me receives over 350 nominations from around the world, and the winner is chosen by a selection committee composed of prominent economists. In 2021, the selection committee was made up of seven economics professors, including Yale’s Fabrizio Zilibotti. The award announcement recognised Giglio for his contributions to empirical asset pricing and his research on climate finance. “Yale (and specifically the School of Management) is an incredible place to do research,” Giglio wrote in an email to the Yale News. “The finance group at SOM is not only a collection of great minds with acute intellectual curiosity and a diverse set of research interests, but is also an extremely collegial group, where constructive feedback is the norm. I have benefited tremendously from this work environment.” As explained above, Giglio’s research broadly concerns asset pricing, which studies how investors perceive and manage risk within financial markets. A specific area that he focuses on is climate finance, which is the study of how financial markets deal with the risks posed by climate change. According to Edieal Pinker, chief academic officer and deputy dean of the School of Management, Giglio’s research is important because it proves that information about climate change is affecting financial markets and provides the tools for investors to manage climate risk.
Pinker added that Giglio’s work on long-run discount rates can potentially guide policymakers to balance present and future societal needs, with respect to investments made to combat climate change. “Financial markets play several important roles in dealing with climate risks.” Giglio wrote. “First, they can help reallocate resources from polluting firms and industries to green(er) companies … Second, they can help firms and investors share risks arising from climate change … that is, transfer risks from those more affected to those less affected or most able to bear these risks. My research has mostly focused on the second role.” In an email to the Yale News, Pinker emphasised that the award was well-deserved, describing Giglio as “a wonderful colleague, insightful and friendly who makes SOM a better place.” Other colleagues shared the same sentiment. Toby Moskowitz, a professor of finance at the School of Management, told the News that Giglio is extremely “generous with his time” with both his peers and his students.
It is difficult to design climate policy because the risks of doing too little—while enormous—will not likely hit us for a long time. In contrast, the costs of doing anything hit us today. Professor Giglio’s research shows how current market data can make this debate possible. It enables serious policy discussion about topics that previously were dominated just by rhetoric. Prior to arriving at Yale, Giglio was a professor at the Booth School of Business of the University of Chicago. Before that, he received his bachelors in economics from Bocconi University in 2006 and his doctorate in economics from Harvard University in 2011. When asked about Giglio’s achievement, Kelly Shue, a professor of finance at the Yale School of Management, shared a memory from their days as doctoral students. “I first got to know Stefano when we were new students together in the Harvard economics PhD programme,” Shue wrote in an email to the News. “He introduced himself and told me he was stressed about our upcoming exams, and then he got the highest grade in our class. Fifteen years later, Stefano is still the smartest and most hardworking person I know.”
So what next? In his own words, his next steps would be to continue studying climate finance and explore other areas of asset pricing, such as volatility risk and crash risk. We all know that while there has been an explosion of research in this area in the last few years, there are still many aspects of climate risks and their interaction with financial markets we don’t understand. The beauty of economics is that it gives us a lens to understand a very tangible aspect of the world around us—people’s behaviour. By trying to use the theories and concepts to understand actual observed behaviour, one can really make the most of [economics]. We use a large cross-section of equity returns to estimate a rich affine model of equity prices, dividends, returns and their dynamics. Using the model, we price dividend strips of the aggregate market index, as well as any other well-diversified equity portfolio. We do not use any dividend strips data in the estimation of the model; however, model-implied equity yields generated by the model match closely the equity yields from the traded dividend forwards reported in the literature. The model by Professor Giglio instead proposes to extend the data on the term structure of discount rates in four dimensions: (i) over time, back to the 1970s; (ii) across maturities, since we are not limited by the maturities of actually traded dividend claims; and most importantly, (iii) across portfolios, since we generate a term structure for any portfolio of stocks (e.g., small or value stocks) & (iv) by hedging climate risks.
Additionally, his work measures the joint default risk of ﬁnancial institutions by exploiting information about counterparty risk in credit default swaps (CDS) and any new shocks that come to surface due to climate change occurrences. For example, a CDS contract written by a bank to insure against the default of another bank is exposed to the risk that both banks default. From CDS spreads we can then learn about the joint default risk of pairs of banks. From bond prices we can learn the individual default probabilities. Since knowing individual and pairwise probabilities is not suﬃcient to fully characterise multiple default risk (a platform that now also includes climate change risks), meaning deriving the tightest bounds on the probability that what if many banks, businesses, markets, etc fail simultaneously. Something that we only recently saw take place in Sri Lanka and a phenomenon we ourselves may not be too far away from.