

TULLETT PREBON INFORMATION AND QUATERNION RISK MANAGEMENT PARTNER TO ENHANCE TRANSPARENCY AND STANDARDISATION IN RISK MODELLING

– Partnership fuels Columbia University research to improve understanding of systemic risk –

London, 8th December 2016: Tullett Prebon Information (TPI), the leading provider of independent real-time price information from the global OTC financial and commodity markets, and Quaternion Risk Management, a leading risk analytics firm, have partnered to launch an innovative open source risk project in collaboration with Columbia University.

Open Source and Standardisation of Risk Models

The new partnership will support opensourcerisk.org, an open source code for derivative risk analytics, and Quaternion's Open Source Risk Engine (ORE), which can improve accuracy, efficiency and transparency across a number of risk calculations including Credit Value Adjustments (CVA) and other derivatives exposures.

The collaboration provides a completely transparent approach to risk calculations and new data visualisation techniques which could start a process of standardising risk modelling across the industry.

Donal Gallagher, CEO at Quaternion Risk Management, commented: "The standardisation of risk models represents a significant opportunity for banks following the vast number of new regulations over the past decade. The project with Columbia University, powered by TPI's data, allows the community to join forces around an open source model using the most accurate and relevant market information available."

Frank Desmond, CEO at TPI, added: "Quaternion's open source risk framework is of huge value to the academic community, facilitating research into the fundamental drivers of financial markets. In addition, at a commercial level, the initiative can help banks to manage their capital more efficiently while meeting regulatory obligations. Our data, Quaternion's innovative approach and Columbia University's research will provide the financial markets with more clarity on risk. We are delighted to be working with two forward-thinking organisations."

Columbia University FinTech Lab

Columbia University's FinTech Lab is the first academic institution to leverage the partnership to further academic research of risk modelling in regulatory and systemic risk. TPI, Quaternion and Columbia University invite finance professionals and the academic community to test, improve and develop the open source code and contribute to the progress of standardised models.

Sharyn O'Halloran, George Blumenthal Professor of Political Economy and Professor of International and Public Affairs and the Chief Academic Officer and Senior Vice Dean at the School of Professional Studies at Columbia University, added: "Columbia University's FinTech Lab brings together an interdisciplinary team of scholars and practitioners to provide solution-

based research and tools to promote transparency in financial markets. The open source risk framework and Risk Dashboard are examples of our current collaborative efforts and we encourage others to contribute and join the debate.”

Professor O'Halloran spoke at a recent [event](#) at the Columbia Club in Manhattan to showcase the collaboration and the [Columbia FinTech lab](#).

TPI and Quaternion separately intend to partner on the development of enhanced data products and services to address banks' needs for analytically robust solutions to strategic problems. For more information on the open source risk project visit: www.opensourcerisk.org

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About Tullett Prebon Information (www.tpinformation.com)

Tullett Prebon Information Limited is the leading provider of real-time price information from the wholesale inter-dealer brokered financial markets. Tullett Prebon Information is a wholly owned subsidiary of Tullett Prebon PLC, a fully diversified inter-dealer broker with a leading presence in global Energy, Fixed Income Securities, Money Markets, Capital Markets, Equities and associated derivative products.

Tullett Prebon Information's data is delivered via industry leading information vendors and also via direct feeds to some of the world's largest financial institutions. The information is relied upon by thousands of market professionals around the globe moving billions of dollars of assets daily for the purposes of trading, derivatives and FX pricing, risk management and portfolio valuations.

About Quaternion Risk Management (www.quaternion.com)

Quaternion Risk Management Limited is an Irish-based, risk analytics firm, advising some of the largest global investment banks on the quantitative aspects of risk management, trading and capital management. The firm has offices in Dublin, London, Dusseldorf and New York. opensourcerisk.org is Quaternion's open source contribution to the risk community. It is the first end-to-end open source risk application that will provide risk analytics for financial institutions through a series of planned releases through 2017.

About Columbia University (www.columbia.edu)

(<http://fintech.datascience.columbia.edu/>)

Among the world's leading research universities, Columbia University in the City of New York continuously seeks to advance the frontiers of scholarship and foster a campus community deeply engaged in the complex issues of our time through teaching, research, patient care and public service. The University is comprised of 16 undergraduate, graduate and professional schools, four affiliated colleges and seminaries in Manhattan, and a wide array of research institutes and global centers around the world. More than 40,000 students, award-winning faculty and professional staff define the University's underlying values and commitment to



pursuing new knowledge and educating informed, engaged citizens. Founded in 1754 as King's College, Columbia is the fifth oldest institution of higher learning in the United States.