

Engineering Financial Instability

Date: Monday 2nd December 2019

Organisers: Mattia Bevilacqua (SRC), Kevin James (SRC, FCA), Alex Stevens (DSTL)

Venue: Conference suite, 9th floor, Pankhurst House, Clements's Inn, LSE, London WC2A 2AZ

09.00 – 09.30	Registration and refreshments
09.30 – 09.40	Welcome address - Jon Danielsson (Systemic Risk Centre & LSE Finance)
09.40 – 09.50	Aims for the day - Alex Stevens (The Defence Science and Technology Laboratory)
09.50 – 10.20	Rob Solly (The Defence Science and Technology Laboratory) <i>Impacts for defence and security</i>
10.20 – 11.00	Jon Danielsson (Systemic Risk Centre & LSE Finance) <i>How to manufacture systemic financial crises</i>
11.00 – 11.30	Refreshments
11.30 – 12.15	Keynote - Prof Sir Paul Collier (University of Oxford) <i>The new security threats will need new whole-of-government responses</i>
12.15 – 12.45	Tom Keatinge (Royal United Services Institute) <i>Towards a geofinancial strategy: financial diplomacy in a changing world</i>
12.45 – 13.30	Lunch
13.30 – 14.00	Nikola Tchouparov (Moneyfold Ltd) <i>Sanctions and alternative payment systems</i>
14.00 – 14.30	Nic Ryder (University of the West of England) <i>Terrorism financing – from fraud to cryptoassets</i>
14.30 – 15.00	Dominic Connor (Independent consultant) <i>Generating risk scenarios</i>
15.00 – 15.30	Refreshments
15.30 – 16.45	Panel and Q&A
16.45 – 17.00	Conference close

Free WiFi: Select “The Cloud” from the network list. Open your browser and follow instructions to register/log on.

Speakers’ biographies and presentation summaries

Keynote: Prof Sir Paul Collier

Sir Paul Collier, Professor of Economics and Public Policy Blavatnik School of Government - University of Oxford; Director of the International Growth Centre, and the ESRC research network, Social Macroeconomics



His research covers the transformation from poverty to prosperity; state fragility; the implications of group psychology for development; migration and refugees; urbanization in poor countries and the crisis in modern capitalism, which is the subject of his most recent book, *The Future of Capitalism*. Sir Paul received a knighthood in 2014 for services to promoting research and policy change in Africa and has been listed as one of the hundred most influential public thinkers.

The new security threats will need new whole-of-government responses

Dominic Connor

Independent consultant



Dominic Connor has both led and worked on projects in investment banking for firms as diverse as JP Morgan, Old Mutual, KSB Deutsche and HM Treasury. He has been a lecturer on the Certificate In Quantitative Finance and is a long time contributor to The Register. He brings experience as a practitioner to his research focusing on how technology issues contribute to systemic risk in financial markets.

Generating risk scenarios

Why do we want to generate systemic risk scenarios?

The domain of technology failure and vulnerabilities is so large that the a priori probability of any given systemic risk that requires multiple individually low probability events is too low to estimate with any useful precision or even to form some ordering of probability and consequence. Without this the allocation of resources to countermeasures is at best arbitrary and more easily game against.

How do we generate scenarios?

The traditional approach of detecting vulnerabilities is rejected in favour of assuming a suitably resourced adversary who examines structures to generate targets to compromise. By looking at variations on a theme we find clusters of attacks where the number of variations both acts as proxy for a probability and consequence to give a more rational ordering.

Jón Danielsson

Reader in Finance, Department of Finance and Director of the Systemic Risk Centre, LSE



Jón Danielsson is director of the ESRC funded Systemic Risk Centre at the London School of Economics. Jón has a PhD in economics, where his dissertation focussed on stochastic volatility. His research interests include systemic risk, financial risk forecasting and financial regulations. Jón has written two books, *Financial Risk Forecasting* and *Global Financial Systems: Stability and Risk* and published a number of articles in leading academic journals. Jon blogs about risk on voxeu.org and presents his views on risk frequently in conferences and seminars.

How to manufacture systemic financial crises

Jon will discuss how the main vulnerabilities of the financial system could be exploited by a hostile agent intent on causing a systemic crisis, and how the authorities charged with protecting the system against such an attack might reduce the likelihood of such an eventuality and mitigate the impact if such an attack takes place.

Tom Keatinge

Director, Centre for Financial Crime and Security Studies - Royal United Services Institute



Tom Keatinge is the founding Director of the Centre for Financial Crime and Security Studies at the Royal United Services Institute, where his research focuses on matters at the intersection of finance and security, including the use of finance as a tool of intelligence and disruption. He has a Master's in Intelligence and International Security from King's College London, where his research focused on the effectiveness of the global counter-terror finance regime. Prior to joining RUSI in 2014, he was an investment banker for 20 years at J.P. Morgan.

Towards a geo-financial strategy: Financial diplomacy in a changing world

Finance underpins the ability of countries to project both hard and soft power. History is punctuated by the financial decline - and thus decline in global influence - of empires and nations. Consider the transfer of global influence from the United Kingdom to the United States; or the challenge posed by China to US hegemony.

The coercive power of finance has likewise long been recognised, projected through the issuing of sanctions, often characterised as a midway between peace and war. The dramatic rise in use of sanctions by the Trump Administration and the current US Congress will have far-reaching and irreversible consequences, reshaping the global financial landscape and setting it on a new course that reflects the eager use of sanctions by today's US lawmakers. Equally, the rise in unilateral or regional sanctions (cf the sanctions applied by Gulf States against Qatar) will also reshape the geo-financial landscape.

Or consider the financial colonisation that China, with its rapidly increasing financial might is achieving in developing markets such as Africa. Where Western countries offer financial support with human rights and criminal justice conditions, China waives such concerns in the knowledge of the influence their financial support will bring.

Considering financial diplomacy is not complete without an understanding of the role of the financiers: the banks and professional services that - most often - are the facilitators and conduits through which financial diplomacy is channelled. Creating an environment in which such actors can operate in support of a nation’s geofinancial strategy is fundamental to the successful implementation of a diplomatic financial strategy.

Nic Ryder

Professor of Financial Crime - University of the West of England, Bristol



I have been a Professor of Financial Crime at the University of the West of England, Bristol since 2013. I previously taught at the University of Glamorgan where I was awarded a Ph.D for research into the role of credit unions in the United Kingdom. My research has been commissioned by the Economic and Social Research Council (ESRC), LexisNexis Risk Solutions, the City of London Police Force, ICT Wilmington Risk & Compliance, Universities South West, the France Telecom Group and the European Social Fund. Between 2015 and 2018, he was the Co-I for the Centre for Research and Evidence on Security Threats, the initial funding is for three years, with £4.35m from the UK security and intelligence agencies and a further £2.2m invested by the founding institutions. My main research interests are in financial crime (especially money laundering, market manipulation and terrorism financing) and I have published widely in these areas. I am the co-author of *Market Manipulation and Insider Trading – Regulatory Challenges in the United States of America, the European Union and the United Kingdom* (Hart 2019); *The Financial War on Terror: A review of counter-terrorist financing strategies since 2001* (Routledge 2015); *The Financial Crisis and White-Collar Crime: The Perfect Storm?* (Edward Elgar 2014); *Money laundering an endless cycle? A comparative analysis of the anti-money laundering policies in the USA, UK, Australia and Canada* (Routledge 2012) and *Financial Crime in the 21st Century – Law and Policy* (Edward Elgar 2011). I am the co-editor of *Corruption in the Global Era: Causes, Sources and Forms of Manifestation* (Routledge 2019); editor of *The Financial Crisis and White Collar Crime - Legislative and Policy Responses* (Routledge, 2017); *Fighting Financial Crime in the Global Economic Crisis: Policy, Trends and Sanctions* (Routledge, 2014) and editor of *White Collar Crime and Risk: Financial Crime, Corruption and the Financial Crisis* (Palgrave: 2018). I am also the co-author of *The Law Relating to Financial Crime in the United Kingdom* (Routledge, 2016) and *Commercial Law: Principles and Policy* (Cambridge University Press, 2012). I am the series founder and editor for Routledge's *The Law Relating to Financial Crime* and have published numerous scholarly articles on financial crime. I am an invited contributor to symposia at the Law Commission; Royal United Services Institute for Defence and Security Studies; PWC, UK Finance, European Society of Criminology, Chartered Institute of Internal Auditors, Chartered Institute of Institutional Auditors Fraud and Forensics, the Wales Fraud Forum, the Centre for European Legal Studies, the Bar Association of Commerce, Finance and Industry and the Institute of Advance Legal Studies. I have been asked to consult on numerous financial crime

matters for the media including Bloomberg News, the BBC, CNBC, the Sunday Times and the Wall Street Journal. In terms of subject areas, I teach Financial Crime and Regulation (LLB) and International Financial Crime (LLMs). I am a member of the University's Academic Board, the Honorary Degrees Committee, Chair of the Law Schools Research Committee, head of the Global Crime, Justice and Security Research Group and the Head of Research in Bristol Law School.

Terrorism financing – from fraud to cryptoassets

The aim of this presentation is to highlight the unprecedented threat posed by terrorism financing in the United Kingdom (UK). He will present evidence of how financiers of terrorism are increasingly engaged in fraudulent activities and how they use cryptoassets to fund acts of terrorism. He will then share evidence of an increased use of this funding mechanism and highlights a number of weaknesses in the UK's counter-terrorism financing (CTF) regime.

Rob Solly

Division Head, Defence and Security Analysis - Defence Science and Technology Laboratory



As Dstl's Division Head for Defence and Security Analysis since April 2015, Rob is responsible for delivering approximately £100M of research and analysis per year. This work is delivered by a broad range of industrial and academic partners as well as Rob's Division of 600 analysts, human scientists and systems engineers.

Rob has over 25 years of experience of research for the UK Ministry of Defence and has been a Fellow of the Operational Research Society for 12 years. After an engineering degree in Aeronautics & Astronautics, he worked in Dstl's predecessor organisations to assess and improve the effectiveness of aircraft, ships, communications and surveillance systems, informing the UK Government's decisions to invest in the Joint Strike Fighter and Queen Elizabeth class aircraft carrier, unmanned combat air vehicles, and defensive aids for aircraft.

Rob then spent six years leading the analysis of alternative strategies, planning assumptions and force structures for the MOD, including for the 2010 and 2015 UK Strategic Defence and Security Reviews, the 2011 Defence Reform Review; and on secondment for the US DOD's 2009 Quadrennial Defense Review.

From 2011 to 2014, Rob led an initiative for the Permanent Secretary to improve the use of analysis and evidence across the MOD, which led to an expansion of the use of analysis, wargaming and experimentation to inform the design of MOD's policy decisions. Rob's interest in this area has led to collaborations with Nesta, the Design Council and the Behavioural Insights Team.

In December 2016, Rob set up the Defence and Security Accelerator – part of the Defence Innovation Initiative aimed at rapidly engaging new suppliers and developing their ideas to solve Defence and Security's most challenging problems.

Impacts for defence and security

Rob’s talk will focus on the importance of understanding the potential impacts and issues which might be caused by financial instability, and the importance of understanding how such systems might be manipulated by other Governments or Non-State Actors to promote agendas contrary to the UK’s interests at home or abroad.

Nikola Tchouparov

CEO – Moneyfold



Nikola Tchouparov is a serial entrepreneur focused on connecting blockchains & regulated finance. His current venture Moneyfold is the world's first provider of regulation-compliant stablecoins. Nikola is a contributor to the Bank of England's RTGS Renewal Programme, and to EBA's policy on innovation and regulatory sandboxes. In his previous career Nikola implemented trading and risk management systems in financial institutions across North America, Europe and Africa.

Sanctions and alternative payment systems

Nikola will introduce the concept of ‘Modern Siege’ and then go on to look at the role of payment systems in Modern Siege, including systems based on commodities and easily tradable goods such as art and antiques, and trade offsets and triangular trade in defence contracts. He will then consider the impact of new technologies, digital fog, intrusion and smurfing. Finally, he will address hybrid warfare tell us how to hack a central bank.