Financial Markets, Innovation and Regulation

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The papers included in this issue are selected from the 7th International Conference of the Financial Engineering and Banking Society (FEBS) organized by Strathclyde Business School during 1-3 June 2017. With circa 200 academics, practitioners and regulators participating as delegates from around the world more than 140 papers were presented at the conference. The conference covered a wide range of topics related to financial markets, innovation, banking, risk, alternative finance and financial technology. The three plenary sessions focused on how can regulation "make markets work well" by Dr Matteo Aquilina (Financial Conduct Authority (FCA), Manager - Chief Economist's Department), financial markets and risk by Professor Jonathan Crook (Professor of Business Economics, Deputy Dean and Director of Research at the University of Edinburgh Business School), and alternative finance and financial technology by Professor Raghavendra Rau (Sir Evelyn de Rothschild Professor of Finance at Cambridge Judge Business School). Hence, the three keynote speeches where perfectly suited to the theme of the conference: "Financial Markets, Innovation and Regulation".

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It is often argued that maintaining the right balance between promoting innovation and regulating anticipated and unintended consequences of innovation is one of the major challenges faced by decision making authorities. Moreover, this challenge is becoming tougher with the ever accelerating speed of innovation. Similar to many other forms of technological and economic innovations, neither financial innovation nor financial regulation aimed at safeguarding the users of invention are new. Financial innovation has been evolving over several decades and the benefits, as well as concerns that come with it are growing rapidly. For instance, Merton (1995) discusses the advances in financial innovation since the 1970s and how financial innovations can pose significant challenges for risk management at the corporate level and to regulators alike. More importantly, Merton (1995) argues that financial innovation is beneficial since it improves financial and economic efficiency but also poses great challenges stemming from the lagging knowledge base required for implementing and managing financial innovation which can differ from the existing training and experience of managers, regulators and policymakers.

The current rapid speed of technology through artificial intelligence and machine learning and the fast growth of new entrants in the financial sector (Zetzsche et al., 2017) are adding to the challenges that regulators face. However, regulators should not have a hands off approach since firms can take advantage of some aspects of innovation and the inherent complexity to exploit uninformed investors (Henderson and Pearson, 2011). Albeit, regulation can also have unintended consequences. For instance, regulatory arbitrage was a key factor for financial innovations such as securitization and repo finance (Calomiris, 2009). Finally there are positive (Laeven et al., 2015) and negative (Freixas et al. 2015) trade-offs associated with financial innovation. Therefore, this special issue looks into different aspects of financial markets, innovation and regulation and proposes guidelines for moving forward.

Following the standard double blind review process of the *European Journal of Finance*, six papers have been accepted in this special issue which covers a wide range of topics in financial markets, innovation and regulation. In particular, this issue covers topics such as how regulatory intervention affects the reciprocal relation between banking and the stock market; the development of an innovative monitoring system flagging up potential price manipulation by market participants; how economic shocks affect the real estate market; whether firms' credit ratings can explain the term structure of individual Credit Default Swaps (CDSs); the impact of a target firm's stock liquidity on the market valuation and risk-adjusted returns of acquirers; and a novel method for identifying the optimal hedging strategy for Central Counterparties (CCPs), while contemporaneously accounting for transaction costs.

The first paper in this issue is particularly timely following the rising prominence of CCPs following the regulatory and policy changes (ESMA, Dodd-Frank Act) towards pushing more plain vanilla over-the-counter derivatives to go through CCPs. The added friction stemming from managing a default can be often overlooked when designing hedging strategies along with the associated transaction costs. Cerezetti et al. (2019) use an unexplored transactional-level data-set on interest rate swaps and assume hypothetical defaults of actual CCP clearing members. The authors' main argument is that both pre-funded requirements for collateralising exposure and close-out procedures following a clearing member's default are complementary and should be jointly treated for the risk management process. The key contribution of the paper is that it introduces a method for contemporaneous integration of profit and losses and transaction costs when estimating the default losses for CCPs. This is pertinent, since there is no uniformity in the risk framework modelling across CCPS, due to their varying business models and markets in which they participate, and due to the limited capability of CCPs of dynamically capturing the risk interaction between margin requirements and close-out procedures. For instance, the daily back-testing conducted by CCPs excludes

changes that can occur in a portfolio during a closeout, especially since the risk profile of a defaulter can change over time during the close-out procedure. Meanwhile, fire drills which are thorough and comprehensive risk assessments occur infrequently, typically annually. Moreover, losses for CCPs can occur exogenously (e.g., via market fluctuations before a CCP triggers the closeout procedure for a defaulting clearing member) or endogenously (e.g., via the contagion originating from defaulting and closeout procedures) increasing market volatility. Cerezetti et al (2019) derive an efficient hedging strategy that accounts for the market funding liquidity risk of CCPs and for transaction costs, therefore, avoiding unnecessary model risk and offers a timely support towards regulatory requirements on CCPs. When accounting for transaction costs the optimal hedging strategy for CCPs is one with a limited number of instruments, suggesting a macro hedging strategy would be the most efficient option.

In the second paper, Kosmidou et al. (2019) assess whether policy actions prevent or accelerate the contagion effects of a crisis by using the Eurozone member states and the financial and sovereign debt crises as their empirical setting. By using news announcements on interventions they address two main questions. Does policy and regulatory intervention prevent or accelerate contagion during a crisis across Eurozone member states? And, how does this translate to the real economy conditional on the severity of the crisis? During medium to high volatility periods policy interventions by supranational institutions (ECB, EU, IMF) decrease the speed of contagion from banking-specific news spreading to both the stock market and the industrial sector. In contrast, news on actions by national governments decelerate the contagion from banking only to the industry sector and not to the overall stock market. Kosmidou et al. (2019) suggest that a coordinated approach by supranational institutions increases the credibility of the announced intervention compared to actions announced by a national government. Overall, supranational institutions add to the credibility and effectiveness of announced actions and interventions benefiting stock market investors but also the real

economy by extension. Finally, the authors argue that further alignment of Eurozone member states in terms of policies can mitigate the effects of a future financial crisis unfolding in the European Union.

The third paper in this special issue, Gounopoulos et al. (2019), also uses the financial and sovereign debt crises as an empirical setting but focuses on another fundamental area of the real economy, namely, the real estate sector which in 2015 had a global worth of $217 trillion. Considering the importance of real estate, the authors focus on the Greek real estate sector for two reasons. First, the real estate sector in Greece lost around 2/5 of its value relative to 2008 peak. Second, there was a drop of almost 90% in market capitalisation of the Greek stock market, thereby offering an interesting set up for testing the relation between the stock and real estate markets. The authors find that in the short-run the economic effect flows from the stock market to the real estate sector, arguing that this is due to the liquidity mismatch between the liquid stock market and the illiquid real estate market, with 84.6% of real estate investors in Greece being home owners/occupiers. However, over the long-run the relation between the stock and real estate markets is reciprocal due to the wealth flows from the stock market to individual investors *(wealth effect)* and due to the use of real estate as collateral that allows real estate owners to access credit markets and channel part or all these cash flows into the stock market *(credit effect)*.

The fourth paper in this special issue by Jahanshahloo and Cai (2019) examines the highly active foreign exchange (FX) market which trades 24 hours a day and is rife with financial scandals and alleged wrongdoing and manipulation, especially with the prominence of algorithmic and high-frequency traders in the FX market. The authors develop a monitoring system that flags up potential FX manipulation and can assist regulators focus their efforts and investigations on these flagged trades rather than casting a wider net across all trades and transactions, which is costlier and less effective in identifying manipulation. Manipulation is

not necessarily an act of a lone trader. Rather it can be an outcome of collusion among trades which could be very hard to trace. Therefore, a systematic approach of identifying suspect quotes in the FX market can be a more effective way of identifying manipulation and by extension prevent systematic and strategic manipulation in future. Jahanshahloo and Cai (2019) use a tick by tick dataset with dealer-specific information around the 4pm (UK time) "closing" of the World Markets/Reuters (WMR) benchmark, the most prominent and commonly used benchmark in FX trading (Financial Stability Board, 2014), for identifying the closing price and assist in the price discovery process required in the $5 trillion market of FX instruments (Bank of International Settlements, 2016). Even though cases of alleged manipulation identified in 2013-14 should act as a deterrent for future FX manipulation Jahanshahloo and Cai (2019) still find a number of suspect cases in 2016, albeit with a lower frequency than in 2013-14. However, these trades identified as suspect trades are not necessarily unfair and illegal, rather they would merit further investigation to determine whether manipulation has occurred. As such, this can be a more efficient approach of identifying manipulation than casting a wider net across all trades.

The fifth paper by Kolokolova et al. (2019) in this issue focuses on CDSs. Even though the CDS notional outstanding amount has dropped significantly from its peak of $61.2 trillion in 2007 to $9.4 in 2018 (Aldasoro and Ehlers, 2018), this market is still economically significant. Since a CDS is an instrument pricing the probability of future default, Kolokolova et al. (2019) investigate whether the firms' credit ratings, which also indicate the probability of future default, can explain, at least partially, the term structure of individual CDSs. Since credit ratings are mostly driven by historical information (Hart and Zingales, 2011), it is arguable whether credit ratings are informative enough regarding future default. Bai and Wu (2016) suggest that credit ratings can still influence short-term risk pricing since they still "look through the cycle". Kolokolova et al. (2019) find that CDSs are affected by credit ratings and

more importantly that individual CDSs are anchored by the CDS prices of peer firms with similar ratings. Moreover, the authors group the firms based on their credit ratings and use their CDSs to construct rating-based hazard rate curves. Then the authors employ a trading strategy of going long on the CDSs with the largest negative CDS deviations from the CDS-implied curves and shorting the CDSs with the largest positive deviations – this CDS trading strategy can gain average returns of 3.2% and 8.2% over the 5- and 20-day horizons, respectively. Even when accounting for transaction costs of 10% of the CDS spread, the returns remain economically significant at 6.5% over a 20-day trading strategy. The findings have two main implications. First, the deviation of CDSs from the implied CDS curves can be used for designing profitable trading strategies. Second, other factors that can impact CDSs in the short-run such as liquidity or demand-supply shocks do not add consistently to the information already priced into the average CDS spread of peer firms of similar credit ratings (*anchoring effect*).

The final paper in this issue, Barbopoulos and Adra (2019), analyses the "outside options" theory which suggests that since listed targets are easier to value, it is easier for them to find other acquirers and have a more credible threat of walking away and sell their shares in the market (Osborne and Rubinstein, 1990). The main premise of Barbopoulos and Adra (2019) is that the outside options argument should be conditional upon the target's stock market liquidity, since this can enhance a target's bargaining power and threat of walking away from a deal. Therefore, acquirers of illiquid targets should enjoy the same if not greater deal gains similar to that of private target acquirers. Overall, target firms' stock liquidity is a key factor in driving the market reaction to the announcements of acquisitions of listed targets and the respective risk-adjusted returns of acquires. Moreover, investors are less concerned of potentially overpaying for the acquisition of illiquid targets compared to that of liquid targets,

suggesting that illiquid targets cannot extract a significant premium from acquires due to their weaker bargaining power and less credible threat of walking away from the deal.

The scope and rigour of the papers included in this special issue provide a broad spectrum of recent developments on financial markets, innovation and regulation and we are confident you will enjoy this issue. Finally, we would like to thank all authors, reviewers and conference delegates for their contributions in making this special issue a success.

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