

# The impact of the Monetary Policy Interventions on the Insurance Industry

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To contrast the economic stagnation affecting Europe, the European Central Bank (ECB) has enforced since 2013 a series of conventional and unconventional expansionary monetary intervention, including Quantitative Easing. These expansionary interventions, in addition to the welcomed stimulus on the economy, result in extremely low interest rates exacerbating the problems arising from the low yield environment. The persistent low yield environment is heavily affecting the EU financial services industry and it is becoming a severe threat for the life insurers in terms of solvency and sustainability of their business models. From a policymakers perspective an increasing attention on the stability and profitability of life insurers has been expressed by EIOPA that constantly ranks the low yield environment as the major source of risk for the life insurers. Concerns are specifically addressed towards companies with a relevant outstanding portfolio of products entailing guaranteed rates of return and profit participation features. The lack of sufficiently remunerable rated assets on the market substantially reduce the capability for (re)insurers to match by a return and duration perspective the outstanding portfolio of guaranteed policies underwritten in high-yield years. Concerns are shared by the national authorities overseeing markets traditionally active on saving products with minimum guaranteed returns such as Germany.

Despite the ample attention and discussions, no analysis has been specifically devoted to the insurance industry. We therefore focus our attention on how and to what extent the 2015 ECB QE and the conventional and unconventional expansionary monetary policy strategy deployed by Central Banks impact the market performances of the (re)insurers in terms of stock returns and CDS spreads.

In the paper, we investigate the impact of conventional and unconventional monetary policies on the insurance industry by looking at the impact of the actions taken by the ECB on the market returns of (re)insurers. Additionally we analyse which are the characteristics of a (re)insurers that drive the sensitivities of the companies to changes in the interest rates.

We investigate the impact of the monetary policy via two approaches. At first, we run an event study on the announcement date of the 2015 ECB Quantitative Easing program. We scrutinize the cumulative abnormal return of a sample of 166 (re)insurers split into different subsamples according to size and geographical criteria comparing it with the behaviour of the other market participants. Subsequently, with the aim of understanding the impact of the general enforced monetary policy strategy and not of a single event, we enlarge the scope of our analysis by investigating the effects on the markets in general and on insurers in particular, of a series of announcements made by the ECB and the Fed. To do so we replicate the approach proposed by [Rogers et al. \(2014\)](#) and [Pericoli and Veronese \(2016\)](#) analysing how and to what extent the Central Banks announcements are signalled by the markets via changes in the term structure of the risk free rate.

The event study suggests a moderate negative effect of the QE on the insurance industry. The different specifications we tested show how the outcomes of the event study are strongly dependent to the observation periods. Furthermore, we do not obtain statistically significant results for the subsamples. By applying the monetary policy surprise based model, we document: i) how the effect of monetary policy interventions on interest rates in the announcement days changes over time and ii) the subsequent impact of the expansionary monetary policy interventions on the market in general and on the insurance industry in particular.

Our empirical evidences suggest that when monetary policy actions generate an immediate reduction of the interest rates (periods 1 and 2), the effect on the stock returns is negative, whereas an increase in the interest rates (period 3) is positively received by the markets. The impact on the stock market is larger during crisis periods than in tranquil periods and the effectiveness of the monetary policy actions tend to fade away after a prolonged applications and in an ultra-low yield environment (periods 4 and 5). This applies both to the ECB and FED actions with one distinction: FED interventions affects larger geographical areas than the ECB ones with the latter having more concentrated but higher impacts. Monetary policy actions, when producing statistically significant results have more limited results on (re)insurers than to other companies, in particular for the ECB.

The balance sheet structure of (re)insurers with assets and liabilities reacting in opposite directions to changes in the interest rates could serve as a rationale for those behaviours. Stock prices are defined by the discounted future profits therefore the potential negative impacts of the reduced interest rates on the long term obligations characterizing the life business overcome the short term benefits deriving from the mark to market valuation of the assets. This explanation is also in line with the results obtained at EU country level where jurisdictions traditionally exposed to long term obligations are higher affected than the others.

The impacts on the (re)insurers is confirmed by the reactions of the CDS market. Our analysis shows how during the ECB monetary policy days when an instantaneous reduction of the interest rate is observed, the detrimental effect on the stock return is associated with a negative impact on the CDS spreads. Given the limited sample we consider, the analysis on CDS still preliminary, however results are so far promising and in line with our expectations.

The two applied models return consistent results. Nevertheless this work shows how a single intervention extrapolated from the comprehensive strategy should be utilized with caution to estimate the effect of the monetary policy intervention on the market.

In the second part of the paper we investigate the characteristics of the (re)insurers based in Europe that drive the reaction to the ECB monetary policy actions. To do so we define a set of balance sheet based indicators aimed at capturing the asset allocation and the composition of the product portfolio of each entity. We then used those indices as regressors for the sensitivity of a (re)insurer to the monetary policy actions in a logit regression.

According to our evidences, only the size and the exposure to fixed income assets seems to drive the sensitivity of (re)insurers to the monetary policy interventions. Against our initial hypothesis, none of the liability based indices provide statistically significant results. Our balance sheet analysis is limited by the frequency and by the granularity of the information. This paper would benefit from the availability of complete and accurate quarterly balance sheet data and from a thorough knowledge of the interactions between the assets and liability sides of the insurers, i.e. duration mismatch. Additionally, we do not provide a clear-cut explanation to the documented scarce effectiveness of the ECB and FED interventions in the last two period of observation. We propose the prolonged enforcement of unidirectional monetary policy actions and the ultra-low yield environment as potential explanations, however at this stage we are not able to be more precise.

We believe that this work provides an initial valuable contribution to the literature on the analyses of the monetary policy enriching it with a specific focus on the insurance industry. Also, the evidence we provide can be of interest for policymakers offering them a wider perspective on the impacts that monetary policy actions have on a specific sector.

## References

EIOPA (2015). Financial stability report, second half year report 2015.

Pericoli, M. and Veronese, G. (2016). Monetary policy surprises and channels of transmission. Working Paper - Banca d'Italia.

Rogers, J. H., Scotti, C., and Wright, J. H. (2014). Evaluating asset-market effects of unconventional monetary policy: A cross-country comparison. International Finance Discussion Papers, 1101.

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Prof. Billio has published more than 100 technical papers in refereed journals, handbooks, and conference proceedings in the areas of econometrics and financial econometrics, with applications to risk measurement, volatility modelling, financial crisis and systemic risk. She is participating to many research projects financed by the European Commission, Eurostat and the Italian Ministry of Research (MIUR). She has been scientific co-coordinator of the SYRTO project, EU-FP7 project devoted to systemic risk measurement (<http://syrtoproject.eu>) and she is now local coordinator of two H2020-EE-CSA project on Energy Efficiency (EeMAP and EeDaPP, <http://energyefficientmortgages.eu>).

Prof. Billio is regularly on the program committees of the major international conferences and workshops of her fields (ESEM, ICEEE, CFE, EFMA, EC2, CREDIT) and serves on the editorial board for the journal Computational Statistics and Data Analysis and Econometrics and Statistics. She is currently member of the Board of Directors of the European Financial Management Association (EFMA) and member of the Scientific Committee of the Italian Association Financial Industry Risk Managers (AIFIRM). Her joint paper with M. Getmansky, A.W. Lo and L. Pelizzon, Econometric Measures of Connectedness and Systemic Risk in the Finance and Insurance Sectors, Journal of Financial Economics, 104, 2012 (535-559) has been recognised as the "most influential article published in leading journals of the Elsevier's Finance portfolio" for the period 2010-2015.