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Bank business models at negative interest rates

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Not all banks are the same. They differ in terms of size, complexity, organisation, activities, funding choices and geographical reach. This article shows how changes in the yield curve and reductions in the ECB's deposit facility rate (DFR) to negative values have affected different types of banks in different ways, thus giving rise to different market perceptions of banks' risks.

Which types of banks are particularly affected by negative interest rates and a yield curve hovering at around zero? What are the financial stability implications of long-maturity nominal interest rates remaining low over extended periods of time? These are currently pressing questions from both a monetary policy and a financial stability perspective (see, for example, Draghi (2016)). This article draws on research to show how different groups of banks have reacted differently to movements in the yield curve, including shifts in short-term rates to negative territory.

Understanding bank business models

To better understand differences across banks, one option is to create a smaller number of peer groups, or clusters, in which to classify the banks appropriately. Robustly constructing such peer groups for a large number of banks, taking into account the numerous balance sheet items for each bank and a range of time periods, is not a straightforward matter, however. In a recent paper, Lucas et al. (2017) present a novel modelling framework for reliably classifying banks into a smaller number of peer groups.[2] Their method essentially extends the basic clustering analysis to a setting of multivariate panel data. Average peer group (cluster) characteristics can change over time, and can be related to economic factors describing the yield curve.

In an empirical application of their methodology, Lucas et al. (2017) study 208 European banks between Q1 2008 and Q4 2015. The analysis identifies six business model groups, and describes how the characteristics of each group evolved over time.[3] Labels such as large universal banks, fee-focused banks/asset managers and domestic retail lenders are provided to distinguish the groups. Changes in the yield curve were found to predict changes in average business model characteristics: As long-term nominal yields declined towards zero, banks tended to grow larger, hold more trading assets and larger derivative portfolios, and, in some cases, have increased leverage and decreased funding through customer deposits. The direction of these effects is potentially problematic from a financial stability perspective and calls for continued prudential assessment and monitoring.

The impact of negative rates across different banks

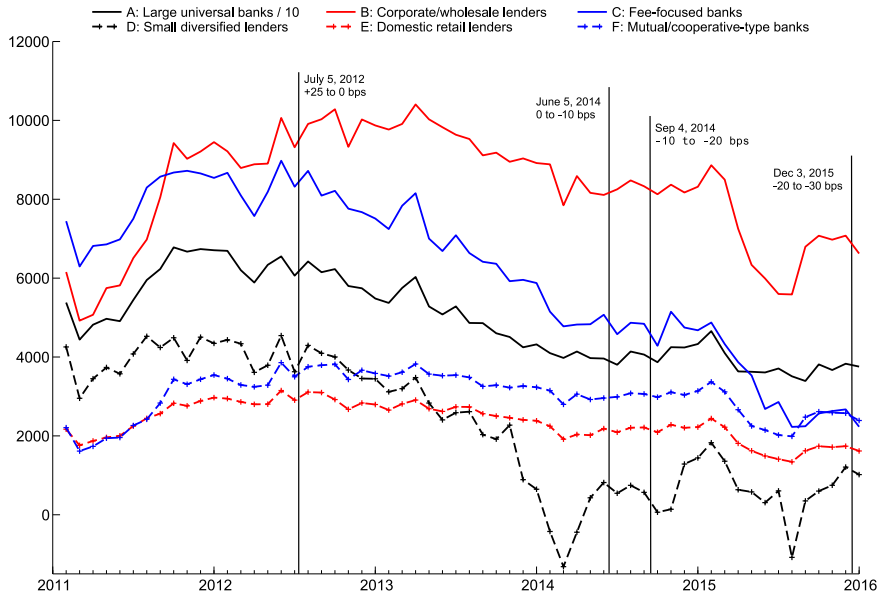
Since the onset of the financial crisis in 2007, many central banks have implemented unprecedented standard and non-standard monetary policy measures, lowering key interest rates to approximately zero. To stimulate post-crisis economies characterised by low growth and low inflation, several central banks, including the ECB, have even adopted negative policy rates. This accommodative monetary policy gives banks an incentive to lend to the real sector, thereby supporting growth and a return of inflation to levels that are consistent with the ECB's price stability objective of below, but close to, 2% over the medium term.

By stimulating the economy, negative rates improve the operating environment for financial institutions through an increase in loan demand, an improvement in asset quality and a boost in the valuation of

assets in trading portfolios. Two main concerns have been voiced by critics of negative policy rates, however. Firstly, negative rates could compress the profitability of financial intermediaries. Banks may therefore take on excessive risks ("risk shifting"), for example by lending to riskier borrowers. Secondly, a "search for yield" among institutional investors, including banks, could lead to a disproportionate demand for high-yielding risky assets. If so, the resulting asset price inflation could ultimately impair financial stability.

In a follow-up paper, Nucera et al. (2017) study the financial stability impact of increasingly negative deposit facility rates on banks' propensity to become undercapitalised in a potential future stress scenario by considering SRISK (see Brownlees and Engle (2017)). This measure is defined as the estimated capital shortfall of a bank, conditional on a 40% drop in a world equity index over a six-month horizon. It is modelled as a function of the equity market valuation of a bank, its leverage ratio, the volatility of its stock price, and the correlation of its stock price with the world index.[4]

Figure 1: Average SRISK for euro area banks at business group level



Note: SRisk data obtained from NYU Stern; see https://vlab.stern.nyu.edu/.
Average SRisk between January 2011 and December 2015 is reported for different bank business model groups: A) large universal banks, B) corporate/wholesale focused lenders, C) fee-focused banks/asset managers, D) small diversified lenders, E) domestic retail lenders, and F) mutual/cooperative-type banks.
Average SRisk for group A is scaled by a factor of 1/10 for visibility. SRisk can be negative if banks are perceived by markets to be abundantly capitalized relative to their risks.

Figure 1 shows SRISK developments between 2011 and 2015 for different bank business model groups. Three ECB DFR cuts to negative values are marked in Figure 1 for 5 June 2014, 4 September 2014, and 3 December 2015. A fourth cut in March 2016 is excluded from the analysis as it coincided with a key announcement concerning ECB asset purchases. The DFR was reduced by ten basis points each time. Money market rates, such as the euro overnight index average, closely follow the ECB's DFR and also became increasingly negative at these times. The figure also contains an earlier DFR cut in July 2012, from 25 basis points to zero.

At least two findings are of interest. First, SRISK in the euro area falls markedly between mid-2012 and mid-2014, which was possibly sparked initially by the ECB's announcement of Outright Monetary Transactions in August 2012 and driven subsequently by the gradual recovery in economic growth and improvement in bank capital buffers. Given the pronounced variation in the level of SRISK during this time, the immediate impact of the three DFR reductions to negative rates on SRISK is on a relatively much smaller scale.

Second, the accompanying panel regression results suggest that some banks are perceived by markets to be relatively more risky following reductions in the DFR to negative values.[5] The risk impact depends on the banks' business models. For example, universal banks with diversified income streams are perceived by the market to be less (systemically) risky. Such banks therefore appear to benefit in net terms from negative rates via the above-mentioned channels. By contrast, banks that rely predominantly on deposit funding may be perceived by markets as riskier. Customer deposits are typically remunerated at above-zero rates. In this case, negative policy rates may then lead to lower net interest margins for these banks.

Conclusion

Banks with different business models differ in their risk response to low interest rates. Studying the different behaviour of business model groups helps to deepen our understanding of the effects of yield curve changes and negative interest rates on different types of banks. This provides important insights, allowing the transmission of monetary policy to be better understood and potential risks to financial stability to be identified.

References

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[2] Simulation experiments confirm that this methodology can be used to classify banks into distinct groups in a variety of challenging settings. Their peer groups are available at www.berndschwaab.eu/papers/LSS_Assignments.xlsx.

[3] The six business model groups identified in Lucas et al. (2017) are similar but not identical to the ones used in Nucera et al. (2017) and in this article. The studies refer to different sets of banks and time periods.

[4] Non-listed banks have been included in the analysis using a matching procedure.

[5] See Nucera et al. (2017) for details and the accompanying econometric analysis.

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