Research in International Business and Finance 39 (2017) 85–101

Contents lists available at ScienceDirect

Research in International Business and Finance

journal homepage: www.elsevier.com/locate/ribaf

Full length article

Income structure, profitability and risk in the European banking sector: The impact of the crisis

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ARTICLE INFO

Article history:
Received 18 January 2016
Received in revised form 19 July 2016
Accepted 20 July 2016
Available online 25 July 2016

JEL:
G21

Keywords:
Income structure
Profitability
Risk
European banks

ABSTRACT

This study sets out to analyse whether the effect of the income structure on the risk and profitability of European banks has changed as a result of the crisis and if it varies according to banks' specialisation in a particular type of banking business. To do so, it estimates the income structure over the period 2002–2012 using data for a panel of European banks. The study also examines if there are differences between investment-oriented banks and banks specialising in financial intermediation in terms of the effect of income structure on risk and profitability. Our findings show that an increase in the share of non-interest income has a negative impact on profitability, although the effect was only significant during the crisis. Nevertheless, analysing the impact on each type of banking business separately, the effect on retail banks is negative and significant, but not significant in the case of banks whose business is more diversified. An increase in the share of non-interest income was found to increase risk, although the effect diminished with the crisis. In general, the results suggest that market power has beneficial effects on financial stability.

1. Introduction

The period of expansion taking place in Europe up until it was interrupted by the outbreak of the financial crisis in mid-2007 was also a period of growth in the banking business in the context of advanced financial disintermediation. The disintermediation process was driven by the development of new technologies, deregulation in the sector, and increased non-bank competition (partly as a result of the greater importance of institutional investment), which affected the banking business. In short, it could be said that, albeit with differences between countries, the financial structure was shifting from being bank-based to market-based.

The crisis reshaped the environment in a way that will affect the features of the banking business and its income structure. With the regulatory changes implemented (primarily Basel III), a scenario of lower profitability is emerging in which there will be a structural change in the income structure. Moreover, the excessive debt overhang in some economies will lead to a number of years of adjustment and deleveraging, which will shape how the banking business develops. And in the specific case of the European banking sector, progress towards banking union, aiming to recover lost ground in terms of financial integration, makes a more competitive scenario look likely, which will also have an impact on the bottom line.

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http://dx.doi.org/10.1016/j.ribaf.2016.07.034

In times of both expansion and crisis, banks have reacted to the changing environment with a view to maintaining their levels of profitability. During the expansion, the progress of disintermediation drove a change in income structure, with an increase in the relative importance of non-interest income, associated with what could be termed non-traditional business. Increased competition led to a drop in the financial margin, which also acted as an incentive to find other sources of income. As the ECB's report (2000) states, between 1989 and 1998 the share of non-interest income in the EU rose from 25% to 41% of the total. Subsequent data from the ECB since 2007 put the percentage this year at 49%, 8 percentage points higher than the figure at the end of the nineties, before the creation of Economic and Monetary Union.

However, in the subsequent crisis, not only did the preceding gradual increase in the relative share of non-interest income come to a halt, but its share of the total declined. Thus, compared with the relative importance of 49% in 2007, in 2013 the percentage had dropped to 42%, remaining at around 41% in each year of the crisis. Therefore, the new macroeconomic environment, the increase in banking risk, and regulatory changes have affected the structure of banks' earnings, giving renewed importance to traditional activities.

In this context, a number of studies have analysed the effect of banking business diversification (for which income structure is a proxy) based on two variables: risk and profitability. In the case of the former the evidence is inconclusive. Thus, although some studies find evidence that the diversification of income sources increases risk (Stiroh, 2004; Stiroh and Rumble, 2006; De Young and Roland, 2001; Lepetit et al., 2008; Demirgüc-Kunt and Huizinga, 2010), the work of Gallo et al. (1996), Rogers and Sinkey (1999) and Ashraf et al. (2016) concludes the opposite. Nor is the evidence conclusive in the case of profitability. Thus, diversification is found to have a positive effect on profitability in Gallo et al. (1996), Stiroh and Rumble (2006), Chiorazzo et al. (2008), Lepetit et al. (2008), Demirgüc-Kunt and Huizinga (2010) and Elsas et al. (2010); while in Stiroh (2004), DeYoung and Roland (2001), DeYoung and Rice (2004), Stiroh (2004), Baele et al. (2007), Berger et al. (2010) and Fiordelisi et al. (2011) it is found to be negative.

The impact of the income structure on risk may depend on the type of banking business. Thus, while investment banks have been hit hardest by the crisis because the share of non-traditional income, which comprises a larger share of the earnings of this kind of bank, is more unstable, in the case of banks relying on financial intermediation, diversification may help increase stability and soften the impact of the crisis. This is precisely the result obtained by Köhler (2013) for German banks, where the effect of the income structure on stability is different for each type of bank.

Against this backdrop, this study aims to provide additional evidence on the effect of business diversification (using income structure as a proxy) on banks' risk and profitability, analysing the specific case of European banks. The study's main value added is that it analyses the crisis period, such that it is possible to determine whether the crisis has altered the income and risk/profitability structure, bearing in mind that after several years in which the relative share of non-traditional income rose, income from the traditional intermediation business regained importance with the crisis. The study also analyses if the effect of the income structure on risk and profitability on investment-oriented banks differs from that on retail banks specialising in financial intermediation.

To do so, it uses data for a broad sample of European banks over the period 2002–2012. A diversification indicator consisting of non-interest income's share of total net income has been constructed based on the information from the profit and loss statement. Based on the income structure, the differences between the characteristics of banks specialising either in the traditional intermediation activity (first quartile of the distribution) or the non-traditional business (last quartile of the distribution) are analysed. In a second stage, using a regression analysis, the effect of diversification/income structure on both risk and profitability is analysed, controlling for the effect of other explanatory variables. The new feature of this regression is that it allows the effect of the determinants of profitability and risk (which include income structure) to vary before and after the crisis, so as to compare whether the crisis has altered the influence of the income structure on risk and profitability.

Another contribution of the study is that it offers evidence on the effect of market power on financial stability, an issue on which neither theory nor the available empirical evidence offer conclusive results.[2] Excessive competition squeezes margins and reduces banks' value, which may encourage them to take more risk by relaxing the criteria for granting credit. Conversely, however, if a bank has market power it may lack incentives for efficient management, thus increasing its probability of insolvency. In this connection, this study estimates a competition indicator at firm level (the Lerner index) so that as well as analysing its effect on risk (and also on profitability), it studies whether this effect differs as a function of banking specialisation and if it has changed as a result of the crisis.

Together with this introduction, this paper is organised as follows. Section 2 describes the variables and sample used. Section 3 contains a descriptive analysis of the differences between banks' characteristics depending on their income structure, with an emphasis on the differences in risk and profitability. Section 4 shows the results of the regression analysis, showing the impact of diversification of the banking business on risk and profitability. Section 5 focuses on the effect of the income structure on risk and profitability of banks specialising in financial intermediation compared with other banks. Finally, Section 6 offers some concluding remarks and policy implications.

2 For a summary see Beck et al. (2013).