
Business Models and Banking Regulation Are Going Forward

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Abstract:

Purpose: The study aims to summarize the level of knowledge and to correlate published material regarding banking business models. A second aim is to answer the question if European countries have different banking business models, especially in countries that have adopted euro currency and countries that have not adopted it yet.

Design/Methodology/Approach: We consider the Liikanen report (2012) and we performed a literature review ex-ante and ex-post above this report using selective criteria. In addition we have completed a study case comparing performance and efficiency indicators (ROE, ROA, and CIR) and profit sources (Net interest income, total operating income, net fee and commission to total operating income, trading income to total operating income) of the banking system from European Union countries correlating the results with the business model terminology.

Findings: From the literature review, we observe that it is a consentient view that the retail banking business model, based on traditional funding, is one of the most reliable business models during a financial crisis. Moreover, the reviewed studies empirically proved that the banks that migrate to retail business model from another business model improved their efficiency and profitability. We concluded that the countries that are out of the monetary union and are in the emerging economy stage along with the countries that are in the cluster of late monetary union have retail banking models and are the most efficient.

Practical Implications: An analytical appraisal of the published material completed with the practical study case regarding EU banking systems is paramount for a future quantitative research study.

Originality/Value: The literature review is valuable both for future researches and for managerial perspective regarding banking business model appraisal.

Keywords: Banking business models, performance, efficiency, banking.

JEL Codes: M21; G21; G24; G28.

Article Type: Research study.

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Best article in the category of PhD candidates.

1. Introduction

The business model (BM) terminology in the banking industry started to be used more frequently in the last decade, both by academics and banking professionals. In this theoretical paper, we performed a literature review regarding the use and the evolution of business model terminology in the banking industry from the perspective of performance and controlling but also on BM change and evolution avenues. First, the study aims to summarize the level of knowledge and to correlate published material regarding banking business models. A second aim is to answer the question regarding the existence of different banking business models in Europe one for countries that have adopted euro currency and another one for states that have not adopted euro yet.

In our research, we consider, as a central point, the Liikanen report (2012), and we performed a literature review ex-ante and ex-post above this report. We used selective criteria like (i) articles published in Clarivates, ScienceDirect, Scopus or Web of Sciences; (ii) working papers that are issued under regulatory institutions like the European Central Bank (ECB), the Bank of International Settlements (BIS), the European Banking Authority (EBA), the European Union-High Level of Expert Group and other research intuitions like the Center of European Policy Studies (CEPS).

The findings of our research based on the research questions indicated that, firstly, the regulatory bodies and the policymakers have just started to study the business model of the banks and the implications regarding the resilience of these models to financial and economic shocks. Moreover, a thorough understanding of the business models can be a predictive tool and help both management and regulators to improve their future strategic decisions. Secondly, on the one hand, the results are showing that mainly the retail banking model, based on traditional deposit funding, is the most stable and less risky and on the other hand in terms of crisis duration is carrying the most risk. Finally, the article proposes that as a future study we ought to analyse the link between strategy and business models on a sample of financial institutions from Eastern and Central European countries to verify the research hypotheses as stated above.

2. Literature Review

The widespread use of BM terminology by the practitioner community and academic literature is linked with the internet advent from 1995 and the development of technology companies (Zott, Amit and Massa, 2011; DaSilva and Trkman, 2014; Osterwalder, 2004; Wirtz *et al.*, 2016). Magretta (2002) asserts that business model is not strategy, making a clear distinction between the two terms “*although many people are using the terms interchangeably.*” Osterwalder (2004) associate’s strategy, business models and process model (indeed on different

business layers), considering that the words are addressing a similar problem “*one of earning money in a sustainable way.*”

Although, there are many comprehensive studies about the business model terminology and concepts Zott, Amit and Massa (2011) argue that there are no definite conclusions of scholars about what business model is, and the literature provides definitions that strongly relate with the theme of interest that scholars are covering. DaSilva and Trkman (2014, p. 379) have been pointing out that the term “*has been misinterpreted and misused over the years and has consequently been inadequately understood and applied by both practitioners and scholars.*”

Recently, Wirtz *et al.* (2016) opinions are that the term needs additional researches, especially regarding the link between business model and other consecrated concepts in business management, including strategy concept. Additionally, some authors identified four valuable avenues for future research, such as innovation, design, change and evolution, performance, and controlling. In our view and regard to the banking industry, we consider Liikanen report being the first when a policymaker uses and analyses the European banking system based on the terminology of business model and officially paves the avenue for using it at a larger scale. The report is defining the six key features that can be used for clustered the banks in business models, such as: (i) dimension (size); (ii) activities, asset structure and income model; (iii) capital and funding structure; (iv) ownership and governance (v) corporate and legal structure and (vi) geographic scope, including cross-border operations. The report concludes that during the crises, the difference in business model performance was mainly conducted by the level of risk-taking and how the risk correlates with the level of capital adequacy.

Expanding our research ex-ante Liikanen report, we found that before 2012, there were scholars that used the above mention terminology to analyze banks by clustering financial institutions based on few variables from the balance sheet or income statement. For example, Altunbas *et al.* (2011) in a study on listed banks that are covering two-thirds of the aggregates balance sheet of the US and European banking system, has been grouping banks in business models, using four groups of identifiers such as capital, asset, funding, and income structures. The results call the supervisory authority to enhance their knowledge and understanding of the business model concept in banking fields.

In the same year, Ayadi *et al.* (2011) started a pioneering study regarding the bank's business model that initially covered 26 banks from Europe, more than half of the EU banking assets in the pre-crisis and post crisis time frame (2006-2009). The authors, based on the hierarchical Ward clustering method, identifies three clusters and associate to these clusters the following business models: retail bank model, investment bank and wholesale bank model.

Ayadi *et al.* (2011) used six main ratios, in order to cluster financial institutions: (i) Customer deposits (as % of assets); (ii) Trading assets (as % of assets); (iii) Loans to banks (as % of assets); (iv) Total derivative exposures (as % of assets); (v) Tangible common equity (as % of assets); (vi) Domestic activity (as % of assets). After clustering the banks, based on the balance sheet variable, the authors analyzed the efficiency and the performance of the above-mentioned business models. Ayadi *et al.* (2011) concluded that over the analyzed period (pre and post-crisis), the retail bank's performance was, generally, superior to the other two models, and it has been considered the bank's business model that supported the real economy. The study may be considered as the beginning of regular monitoring of the EU banking sector.

Ex-post Liikanen report, there is an increased number of studies provided by both scholars and supervising bodies that use and develop the terminology of business model, mainly to create a better understanding of bank's resilience to different economic environments. Rym Ayadi's studies, from CEPS, continue to develop the clustering method by expanding the bank sample from one year to another so, in 2012 the study covered 74 banks from EU-27 (2012), 147 banks covering more than 80% of the EU banking industry in (2014) and 2,542 banking groups and subsidiaries of non-European banks, more than 95% of EEA and Swiss banking assets in (2016). In these studies, based on the hierarchical clustering method, were identified five business models, as follow: (i) focused retail banks; (ii) diversified retail (type 1); (iii) diversified retail; (type 2); (iv) investment banks and wholesale banks. The study confirmed one of Liikanen report conclusions that in Europe, it is a diversity of business models, which is valuable. Moreover, the studies proved that some bank's business models are more resilient than others to different economic shocks, and authors consider the business model analysis as a "*predictive power*" tool both for practitioners (bankers) and authorities.

Furthermore, in identifying and understanding the resilience of different bank's business models to a variety of shocks, scholars have been expanding both: the geographic area and time frame of research. Mergaerts and Vander Vennet (2016) observed and analyzed 505 banks from 30 European countries between 1998 and 2013. The author's identification method for business model is based on factor analysis. The results of the study indicate that business models are long term concepts and that the retail orientation, along with income diversification model is generating better performance. Hryckiewicz and Kozłowski (2017), using the k-medoid clustering method, analyzed 458 systemically important banks from 65 countries over the world from 2000 to 2012. The authors clustered banks in four business models, specialized, investments, diversified and trader with a traditional or non-traditional earning assets structure and funding structure. The results of the study call the policymakers and regulators to pay attention both on assets and liability structure of the bank and their correlations based on the bank specific strategy. Also, the authors found a correlation between banking business model and crisis depth and duration (Thalassinos *et al.*, 2015). Roengpitya *et al.* (2017)

analyzed 178 banks from 34 jurisdictions (Europe, Asia, Australia, US, Russia). Roengpitya *et al.* (2017) using the same as other authors, the activities reflected in the balance sheet, as input data, to identify the business models. The authors identified four business models, retail and wholesale funded, trading, and universal model. The authors conclude that the retail-funded model is robust and the most popular.

Ayadi *et al.* (2014) studied the migration of banks over time, between different business models. Roengpitya *et al.* (2017) considered these dynamics too. Additionally, Roengpitya *et al.* (2017) found that the banks which changed their model into the retail funded model improved their return on equity on average with 2.5 percent in comparison with those that did not make a change. Conversely, those banks that changed their business model into wholesale funded banks lost five percent on average from their efficiency.

Similarly to the earlier mentioned authors, Chiorazzo and Morelli (2016) performed an interesting study regarding 546 US banks with assets between 500 million and ten billion dollars. The novelty of the study is the fact that authors highlight the attention on “*What went right?*” during the period mentioned above in bank’s business model. Starting from the Stigler survival concept, the authors identify during 1997-2012 which bank’s business model survives. In their studies, Chiorazzo and Morelli (2016) identify the so-called “*traditional*” business models of bank, using four variables: relationship lending, relationship deposits, traditional activities, and branch networks. They declared a bank with a traditional business model if it exceeds the median value of at least three of the four features above mentioned, with a nontraditional business model if a bank exceeds the median value of four elements, and strategically ambiguous, banks that lay in-between these two extremes. Chiorazzo and Morelli’s conclusions show that under normal economic conditions, banks with a traditional model are more viable. Moreover, under stressful financial circumstances, the traditional model is survival in comparison with the banks that are not using it.

Argimon *et al.* (2019), in a study on banks with headquarters in Spain, Netherlands and United States that performed international activities, identified two business models: (i) a centralized one, which is mainly base on intragroup funding and (ii) a decentralized business model, for banks that are using local intermediation for funding their international activity. The researchers mentioned above concentrated their study by identifying the link between the monetary policy transmission mechanism and a centralized or decentralized business model. The thematic of monetary policy transmission, in connection with the business model based on funding structure, is also covered by Gambacorta and Marques-Ibanez (2011). Similarly, the issue of funding of international banks was approach by Liikanen (2012). One of the conclusions was that the banks with a decentralized model, based on local deposits, performed better during the economic crises, because of a more

stable funding source (Thalassinos and Thalassinos, 2018; Rupeika-Apoga *et al.*, 2018).

Cernov and Urbano (2018) from European Banking Authority elaborated a complex exercise regarding the identification of bank's business models over the whole European banking population (5292 credit institution, at solo level², from 27 out 28 EU members states less Bulgaria and Norway). The exercise is a static one, based on the financial data, as of 31 December 2015. Cernov and Urbano (2018) use a novel mixed approach for a bank's business model identification by combining qualitative and quantitative methods (compared with the clustering method, mostly used in the literature). Applying this mix, the information regarding the business model reaches a more granular level. The qualitative identification of the business model is based on the expert judgment (of supervisory authorities), and it is compared with quantitative indicators. Finally, the authors found four broad business models with eleven subcategories. The study is concentrated just on identifying the business models, with no analysis on the performance and profitability of the business models like in other studies. The author concludes that as long as the EU market is so fragmented, using just quantitative methods in identifying business models is not sufficient.

Farne and Vouldis (2017) define the bank's business model *"as the activities that companies are undertaking and the determinants like revenues, effectiveness, costs, degree of efficiency, pricing policy are part of the business strategy and outcomes of the business model."* In this context, Farne and Vouldis (2017) identify the input variable as a choice variable in a business model. That is the strategic choice of the bank's management and reflected in the balance sheet. The outcome variable (the results of the options of management decisions) are (i) risk indicators (leverage and solvency indicators, risk decomposition, credit risk), (ii) performance and efficiency indicators (ROA, ROE, Cost to Income Ratio) and (iii) the profit sources (Net interest income total operating income, net fee and commission to total operating income, trading income to total operating income).

Another stream literature is linking the type of the bank, its business model, with the ownership structure. We identified empirical studies that are debating this subject that suggest the interconnection between ownership structure, business model and performance during the crises. Starting the analysis from the ownership structure in the literature are identified two groups of banks that are influencing the business model and the performance, the shareholder-value (SHV), and the stakeholder-value (STV) banks. The first one has the aim to maximize the profit (Return on equity-focused banks) for the shareholders, and the second one has multiple goals (focused on depositors, partners, local community, employees, etc.).

²By using individual/solo data for the full EU banking landscape, the specificity of each individual institution, irrespective of the business model of other institutions in the same group, which is a new approach compared with the existing literature.

Ayadi *et al.* (2015b) associates the feature of SHV to commercial banks and nationalized banks and STV to cooperative banks, public banks, and savings banks. Ferri *et al.* (2014), analyzing the financial rating issue by the primary rating agency (Moody's and Fitch) for individual banks and using parsimonious and an extended regression function, noticed that during and after the crisis the stakeholder performed better than the shareholder value banks. Before the crisis, Llewellyn (2005) made a comparison between British and European profitability banks, concluding that the SHV model is predominant in the UK, and the STV is more present in the European area. The author indicated at that time that additional pressure would be on European banks to adopt more SHV model.

3. Methodology

We performed a literature review ex-ante and ex-post above the Liikanen report using selective criteria like (i) articles published in Clarivates, ScienceDirect, Scopus and Web of Sciences (ii) working papers that are issued under regulatory institutions like the European Central Bank (ECB), the Bank of International Settlements (BIS), the European Banking Authority (EBA), the European Union-High Level of Expert Group and other research intuitions like the Center of European Policy Studies (CEPS).

Additionally, we completed a study case, and we compared performance and efficiency indicators (ROE, ROA, and CIR) and profit sources (Net interest income total operating income, net fee and commission to total operating income, trading income to total operating income) of the banking system from European Union countries and correlate the results with the business model terminology. Moreover, we split states into four clusters based on qualitative factors such as currency adoption and level of economic development. First cluster non-monetary union - emerging economies (Bulgaria, Czech Republic, Croatia, Poland, Romania, and Hungary), second cluster, the largest one containing 14 states that adopted euro from the beginning (January 1999). The third cluster is based on the states that adopted euro currency latter (Lithuania, Estonia, Latvia, Slovakia and Slovenia), the so-called late monetary union countries. The last cluster is named non-monetary union – advanced economies formed by Sweden, Great Britain, Norway, Denmark, and Iceland. Furthermore, for broader analysis, we introduce in our research inputs or choices of the business model provided by assets composition or rations such as loans and advances, debt securities, derivatives, and equity instruments. We used aggregate data of the banking system provided by EBA and available in quarterly risk dashboards as of the second quarter of 2019. To calculate the mean and the standard deviation per each cluster and ratio we have used SPSS software.

4. Findings and Discussions

For our study, to test our hypothesis question, we retrieved data from EBA second quarter of 2019 risk dashboard. According to Farne and Vouldis (2017), the balance

sheet ratios like assets structure (debt securities, equity instruments, derivatives and loans advances to households and non-financial companies are input variable as choices in business models and performance, efficiency and profit sources are the output of the business model. Using SPSS program, we calculated the mean and the standard deviation for each ratio and each cluster as per Table 1. The research hypothesis is stated as:

H1: Europe has different banking business models, one for countries that have adopted euro currency and another one for states that have not adopted euro yet.

Table 1. Asset Composition and Performance, Efficiency, Profit Sources for European Banking System

Clusters		Return on equity	Cost to income ratio	Return on assets	Lons to deposit ratio	Net interest income to total net operating income	Net fee and commission income to total net operating income	Net trading income to total net operating income	Debt Securities	Equity Instruments	Derivative	Loans and Advances
Non monetary union- Emerging	Mean	13.52%	49.40%	1.56%	80.17%	65.86%	25.12%	3.15%	18.41%	0.23%	0.82%	67.19%
	N	6	6	6	6	6	6	6	6	6	6	6
	Std. Deviation	3.13%	6.53%	0.32%	11.22%	3.55%	4.31%	2.13%	6.81%	0.12%	0.75%	9.19%
Monetary Union	Mean	6.66%	63.34%	0.53%	108.79%	62.97%	26.93%	5.25%	14.96%	0.86%	4.02%	63.41%
	N	14	14	14	14	14	14	14	14	14	14	14
	Std. Deviation	2.81%	8.24%	0.24%	33.04%	9.63%	7.16%	7.58%	4.78%	0.79%	3.68%	7.49%
Late monetary union	Mean	12.32%	50.01%	1.41%	94.90%	63.59%	29.22%	2.56%	11.70%	0.25%	0.34%	69.64%
	N	5	5	5	5	5	5	5	5	5	5	5
	Std. Deviation	2.46%	8.24%	0.29%	22.15%	8.89%	3.93%	2.17%	9.73%	0.24%	0.17%	9.49%
Non Monetary Union- Advanced	Mean	9.53%	52.95%	0.74%	205.70%	62.85%	20.16%	8.74%	10.57%	1.30%	5.42%	70.85%
	N	5	5	5	5	5	5	5	5	5	5	5
	Std. Deviation	2.92%	8.67%	0.26%	92.06%	7.83%	3.67%	6.45%	3.19%	1.02%	4.81%	8.69%
Total	Mean	9.45%	56.60%	0.92%	116.91%	63.63%	25.82%	4.96%	14.37%	0.70%	3.00%	66.44%
	N	30	30	30	30	30	30	30	30	30	30	30
	Std. Deviation	3.98%	10.00%	0.52%	59.18%	8.03%	6.19%	6.09%	6.32%	0.77%	3.62%	8.50%

Source: Author's calculations based on EBA Risk Dashboard Q2- 2019.

The four clusters are helping in seeing the data in a more granular view. As per the first cluster, the Non-monetary union- emerging economies, the business banking model is a retail one with highest level income coming from interest (loans and debt securities) and with a low level of income from trading. The standard deviation is the weakest, showing homogeneity of the business models across the six countries that are present in the cluster. Regarding the funding, loans to deposits ratio (M= 80.17, SD=11.22) shows that the business models at the system level are a retail one, entirely funded by deposits. The first cluster has positive records efficiency in terms of ROE, ROA, and CIR.

The second cluster has the largest population in terms of countries and shows heterogeneity of the business models across the states. Income sources are more diversified, but with a higher level of net trading income ($M=5.25$, $SD=7.58$) in some countries and a decrease of the net interest income ($M= 62.97$, $SD= 9.63$). Loans to deposits ratio ($M=108.79$, $SD=33.04$) prove that the banking business model in these countries is not anymore deposit funding, showing that the model is more retail diversified. In terms of efficiency and profitability the data is underling one of the lowest levels across the clusters. The cluster has the highest level of cost to income ratio.

Late monetary union cluster has the same features as the first cluster indicating homogeneity of business models across countries. This group has the largest mean in terms of loans and advances from total assets ($M=69.64$, $SD= 9.49$) and the highest level of the mean regarding net fees and commission income from total operating income ($M=29.22$, $SD=3.93$). The loans to deposits ratio indicate that the business models are mainly funded by deposits, but the standard deviation reveals heterogeneity across the countries in terms of business model funding. In terms of profitability and efficiency is ranked second after the Non-monetary union-emerging markets. The cluster reveals mixed information regarding de business models concluding that we have two kinds of models' retail and diversified retail.

The non-monetary union advanced economies cluster his main features is the highest level of loans to deposits ratio ($M=205.7$, $SD=92.06$), which indicates that the business models are not just deposit-based funding. The previous rate associated with the highest level of income from trading proves that we have diversified retail with many intense activities on trading and wholesale.

Based on our clusters and data interpretation of the ratios regarding the asset structure and the output of asset combination, we answered the research question that in Europe, based on the currency and level of development we have different banking business models. We conclude that countries like Bulgaria, Romania, Poland, Czech Republic, Croatia, and Hungary have mainly traditional banking business models based on deposit funding, with a level of income based on interest and with a high level of efficiency and profitability.

The business model from the late monetary union mainly based on traditional retail. Only two countries are exceeding loans to deposit ratio above 100%. Clusters that include more variate business models are associated with advanced and stable economies.

5. Conclusion and Recommendations

In this paper, our main aim was to perform an extensive literature review regarding the banking business model, and additionally, to perform a study case to test our research question. The limitation of our study given by the fact that the data from the

EBA risk dashboard, are just a snapshot as of the end of the second quarter of 2019 and is not covering the whole banking systems from the countries that we have analysed.

From the literature review by regulatory bodies we observe that it is a consentient view that the retail banking business model, based on traditional funding, is one of the most reliable business models during a financial crisis. This model participated the most in sustaining the real economy. Moreover, the review studies empirically proved that the banks that migrate to retail business model from another business model improved their efficiency and profitability. Finally, the negative part of the retail business model is that although it is more resilient in the crisis, the recovery time for the countries that mainly based on retail was more prolonged than other countries that have more diversified banking business models.

From the study case, we conclude that the countries that are out of the monetary union and are in the emerging economy stage and along with the countries that are in the cluster of late monetary union have retail banking models and are the most efficient and are providing two digits ROE. The banks that are in the cluster of monetary union and non-monetary union, but advanced economies, are under pressure in terms of profitability and efficiency, although they are more diversified in terms of income and business models.

From a future study perspective, we should evaluate the relationship between strategy and business models on a sample of financial institutions from Eastern and Central European and the impact of the newly entered actors the so-called Fintech.

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