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MARKET VALUE OF BANKS: AN INTERNATIONAL COMPARATION

Why are European banks less profitable than American banks?

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1. INTRODUCTION

The analysis underlying this TFG is based on quantitative and qualitative data prior to the declaration of the COVID-19 pandemic. We know today that the consequences for the societies and the economies around the world are going to be very relevant, but is too soon to evaluate the specific impacts. In any case, in the conclusions is included an executive summary of what it has happened until the delivery date of this report and an assessment of how the consequences of the pandemic may affect the conclusions of this research.

In the current macroeconomic environment, the performance of banks is weaker due to different factors: very low interest rates even negative; new customer expectation about accessibility, transparency, simplicity and personalization of financial services; the new digital players (“big tech”, “fintech”, specialist lenders...); the risks and challenges of the digitalization process; higher competition; and new and more demanding regulatory requirements.

But this new environment is not affecting the banks of the different countries equally. In the emerging markets, banks has a sustainable profit growth and higher profitability that banks in developed markets. But even in the developed markets, banks performance is uneven, while in US, for the time being, banks has stable profitability, in Europe banks have a weak and low profitability.

European banks weak profitability has been highlighted as a key risk for euro area financial stability, first, because the inability of banks to build capital buffers by retaining earnings limits their loss absorption capacity and, second, persistently low profitability could force banks to take on undue risks in order to generate higher returns, which can lead to increased financial fragility going forward.

The low profitability of European banks relative to their U.S. counterparts has recently raised concerns among policy makers and researchers. This TFG try to answer the following research question: Why are European banks less profitable than American banks? The TFG’s objective is to demonstrate that European banks are undervalued

compared to American banks, to analyze what factors explain the lower profitability of European banks and identify measures to improve their valuation.

2. EUROPEAN BANKS ARE UNDERVALUED COMPARED TO AMERICAN BANKS

The European financial sector is in a better balance sheet position than it was before the crisis, but its profitability is much worse. In order the measure the strength of the balance position we are going to consider three factors:

- Common Equity Tier1 (CET1): is the key factor to assess solvency and it is the core part of the capital structure, this capital measure was stablished in 2014/15 as a precautionary tool to protect the economy from a financial crisis. CET1 ratio measures a bank's capital against its assets, because not all assets have the same risk, to calculate the CET1 is used the Risk Weighted Assets (RWAs). The required CET1 ratio for European banks as of 2020 is 4.5%. Before the crisis, on average the European banks had a CET1 around 5% and now a days the sector has a CET1 around 14%. European banks have managed to improve CET1 Ratio since the crisis, meaning they are now more solvent.
- Liquidity Coverage ratio (LCR): is the key factor to assess liquidity risk, LCR measures the proportion of highly liquid assets held by a bank to guaranty their ability to meet short-term obligations. The LCR is calculated by dividing a bank's high-quality liquid assets by its total net cash flows, over a 30-day stress period. Banks are required to hold an amount of high-quality liquid assets that's enough to fund cash outflows for 30 days. The regulator stablished thirty days because, in a financial crisis, the governments and central banks response to rescue the financial system would occur within 30 days. Before the crisis, on average the European banks had a LCR around 71% and now a days the sector has a LCR around 148%. European banks have increased LCR since the crisis, meaning they have improved their liquidity position.
- Non-Performing Loans (NPL): is a measure of credit losses, it is a loan in which the borrower has not made any payments of principal or interest for some time.

In banking (the ECB uses the same criteria), a loan is defined as non-performing if they are 90 days past due with receiving the scheduled payments. The NPL ratio is the total amount of Non-performing loans in a financial institution divided by the total value of the credit/loan portfolio. Before the crisis, on average the European banks had a NPL ratio around 7.5% and now a days the sector has a NPL ratio around 3.6%. The amount of NPL has been reduced since the crisis, the European banks have less non-productive assets in the balance sheet and less credit losses.

To assess the profitability of the European banking sector, we are going to use the Return on Equity (RoE). RoE is a financial performance indicator calculated by dividing net revenue by shareholders equity. RoE measures how effectively executives uses the assets of a firm to generate profit, a positive or negative ROE will rely on what's common for peers in the industry. Before the crisis, on average the European banks had a RoE around 15-20% and now a days the sector has a RoE around 6% (see Table 1). In summary, since the crisis, the European banks have evolved to more "healthy" situation, European banks today are more solvent, have a better liquidity position and have less credit losses, but they are less profitable.

Indicator [1) 2)]	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019
Return on equity (RoE)	6.85%	6.16%	5.76%	6.01%	5.83%
Return on assets (RoA)	0.45%	0.42%	0.38%	0.40%	0.38%
Cost-to-income ratio (CIR)	65.08%	65.85%	69.18%	66.43%	65.48%

Table 1: European banks key performance indicators
Source: ECB[1]

The poor profitability of Europeans banks explains why European banks are undervalued in relative terms to US Banks. To assess the value of the banks we are going to use Price to Book Value (PBV). Price-to-book ratio compares a firm's market to book value by dividing the price per share by book value per share (BVPS), book value is the net asset value of a company calculated as total assets minus intangible assets (goodwill…) and liabilities. PBV can be used by investors to identify investment opportunities and to compare companies with one another. In

[1] ECB (2020) Supervisory Banking Statistics, third quarter 2019
https://www.bankingsupervision.europa.eu/banking/statistics/html/index.en.html

order to analyze the evolution of PBV Gap, we have used the S&P 500 Bank Index (S5BankX) for the US banks and the EURO STOXX Bank Index (SX7E) for the European banks. As the Chart 1 shows below, during the crisis in 2010, the difference in PBV between US and European banks was only 0.2%, now a days the gap was widened to 0.7%. The Europeans banks nowadays are quoting at 0.6 book value but the US banks have a PBV of 1.3x US.

Chart 1: European vs US banks PBV evolution (2010-2020)
Source: Author' own elaboration

3. EXPLANATORY FACTORS OF WHY EUROPEAN BANKS ARE UNDERVALUED IN COMPARISON TO US BANKS

US banks are significantly better valued than European and profitability is the main reason behind a higher valuation of US banks. There several factors that explain this difference in profitability:

3.1. MACRO FACTORS

3.1.1. GDP growth

The real GDP growth is positively correlated with banking performance (profitability) and there are two major factors which explain this positive effect: Net Interest Income improving (NII) and loan losses reducing. The performance of companies, which are banks' clients, improves throughout economic expansion, and declines during the recession phase. Therefore, when the GDP growths, corporates

ask for more loans and make more deposits, boosting banks' NII and reducing loan losses. Also, a higher GDP growth often means lower unemployment and higher income, consume and savings for individuals, increasing retail banking profitability and decreasing credit losses in consumer loans. Consequently, banks' NII and credit losses on loans are pro-cyclical with GDP growth. As Chart 2 shows below, the banks' Return of Assets (ROA) is correlated with GDP growth.

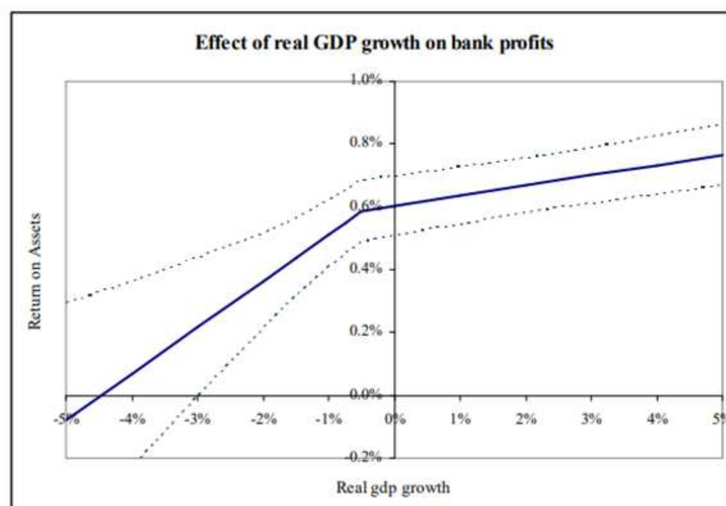

Chart 2: Effect of GDP growth on banks profitability
Source: DNB Working Paper[2]

Albertazzi and Gambacorta (2008)[3] estimate a set of equations for banks' NII and profit before taxes (PBT) and evaluates the effects on banking profitability of shocks to both macroeconomic and financial factors. They demonstrate that banks' profits are pro-cyclical: GDP influences both NII (via lending activity) and loan loss provisions (via credit portfolio quality). Pro-cyclicality is slightly greater in the UK and in the US than in Europe. In a positive macro (GDP growth) scenario, banks in the UK and US make higher profits than their counterparts in the euro area.

Bolt, de Haan, Hoeberichts, Oordt and Swank (2010)[4] estimate the relation between bank profitability and economic downturns using a theoretical model that takes into

[2] Bolt, W., Haan, L., Hoeberichts, M., Oordt, M. and Swank. J. (July 2010) Bank Profitability during Recessions. DNB Working Paper, 251, 1-38.
[3] Albertazzi, A. and Gambacorta L. (November 2008) Bank profitability and the business cycle. Journal of Financial Stability, 3, 393-409.
[4] Idem footnote 2.

account the bank's lending history as well as amortization and losses on outstanding portfolio of loans. They demonstrate the pro-cyclicality of banks' total profits, taking into account three components: NII, other income and net provisioning. They find evidence that bank profits behave pro-cyclically and that this co-movement is especially strong during severe recessions.

Based on the above, it seems clear that the real GDP growth is positively correlated with banking performance. In the last 10 years the EU countries have had lower GDP growth that US (US average 2.5% versus EU average 1.5%), being this lower GDP growth one of the reasons that explain the lower profitability of the European banks comparing with US banks.

3.1.2. Interest rates

The cyclical positioning of US and EU economies largely differs, with positive interest rates in the US allowing banks' profitability on net interest margins, contrary to the extended negative interest environment in Europe. This difference in interest rates is inevitably reflected in the treatment of excess liquidity. While in the euro area, the ECB applies negative rates and penalizes banks on the money taken, charging 0.5% (deposit facility rate), and the situation in the US is quite the opposite, the FED pays 0.25% to the banks for the funds deposited.

The US Depository Institutions, at the end of January 2020, had deposited $1,500,568[5] million of excess of reserves in the FED, assuming the actual Interest Rate on Excess Reserves (0.10%) and a constant deposit, the US financial entities will increase their NII by $1.500 million in annual basis.

The ECB's two-tier system[6] exempts part of European banks' excess liquidity from deposit rate facility (-0.5%). Exempted amounts are set as a six times of banks' minimum reserve requirements (MMR). As Figure 1 shows below, the European banks have 134,000 million EUR of minimum reserve requirements remunerated at 0% and an exempted amount of 804,000 million EUR, also remunerated at 0%. At

[5] Federal Reserve Bank of St. Louis (2020) Excess Reserves of Depository Institutions. https://fred.stlouisfed.org/series/EXCSRESNS
[6] European Central Bank. (2019). Two-tier system. https://www.ecb.europa.eu/mopo/two-tier/html/index.en.html

the end of 2019, the European financial institutions had deposited 1,785,000 million EUR of excess liquidity in the ECB, so 981,000 million EUR has a cost of -0.5% impacting negatively their NII by 4,900 million EUR in annual basis.

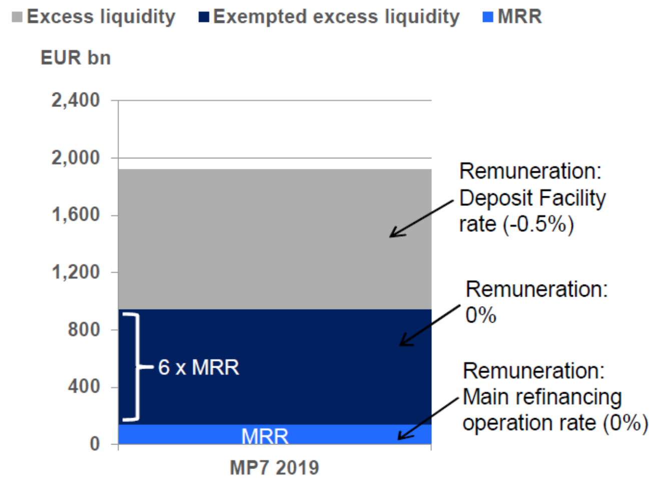

Figure 1: European banks breakdown of excess liquidity
Source: ECB

It is clear that the negative rates existing in EU are difficult for European banks. One of the principal source of banks' profit is to invest the retail and SMEs deposits, with negative rates, this core profitable business turns into a permanent source of losses. A BOA Merrill Lynch's research[7] shows (see Chart 3) how the European banks' Net Interest Margin (difference between loans yield and deposits cost) decrease as the interest rates in the Eurozone decrease until they become negative.

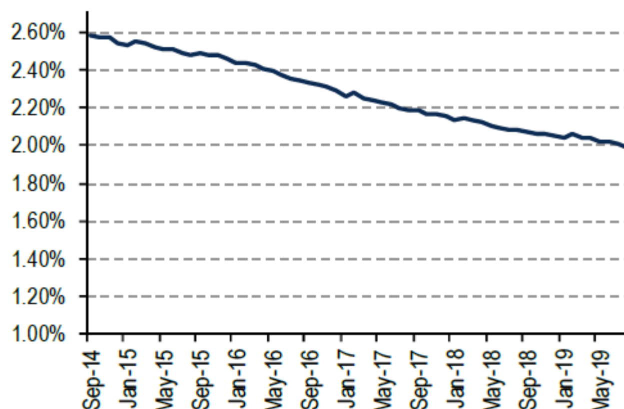

Chart 3: European banks Net Interest Margin evolution
Source: BOA Merrill Lynch research

[7] Bank of America Merrill Lynch (24 October 2019). European Banks Strategy Research.

Carbó, Cuadros and Rodríguez (2019)[8] analyze international economies experience of negative interest rates and the existing research of the impact on banks. They also make an empirical analysis of the impact of negative interest rates in NII of the European banking sector. Their empirical investigation shows that banks in negative interest-rate environments experienced an 18.4% decrease in their NIM compared to other banks operating in European countries that did not adopt negative interest rates. They also contrast that banks taking more customer deposits are also found to be more affected by low or negative official rates.

Borio and Gambacorta (2017)[9], Borio, Gambacorta and Hofmann (2017)[10] analyze the impact of monetary policy on the profitability of banks. The analysis indicates significant non-linear results. Firstly, they demonstrate there is a strong relationship between both the short-term rate level and the yield curve slope. Probably more importantly, banks' ROA is influenced by the short-term rates. There are two linked effects. On the one side, the interest rate structure (slope of the yield curve) has a positive effect with NII. On the other side, short-term rates have a negative effect on loan loss provisions and on non-interest income. The first impact dominates over the second, if interest rates fall to low, flat, or negative levels, this suggests that an extremely flat term structure crumbles bank profitability.

Brunnermeier and Yann (2017)[11] describe some complex systems, showing that holding official low or negative rates for a long period of time does not allow the bank to achieve better funding conditions while continuously reducing bank margins, affecting negatively NII.

Heider, Saidi, and Schepens (2017)[12] analyze the limits of monetary authorities to apply negative rates. They demonstrate whether banks are unwilling to charge

[8] Carbó, S., Cuadros, P. and Rodriguez, F. (2019) Intermediation below zero: the effects of negative interest rates on banks' performance and lending". FUNCAS
[9] Borio, C. and Gambacorta, L. (2017). Monetary policy and bank lending in a low interest rate environment: Diminishing effectiveness?. Journal of Macroeconomics, 54, 217-231.
[10] Borio, C., Gambarcorta, L. and Hoffman, B. (2017). The influence of monetary policy on bank profitability. International Finance, 20, 48-63.
[11] Brunnermeier, M. K. and Yann, K. (2017). The Reversal Interest Rate. Princeton University Working Paper, 1-27.
[12] Heider, F., Saidi, F. and Schepens, G. (2017). Life below zero: Bank lending under negative policy rates. Working Paper.

negative rates on to depositors, this raises banks' deposits costs and lowers deposits net value.

Based on the above, it seems clear that the short-term rate level and the yield curve slope affect banks' profitability. In the last 10 years EU have had lower interest rates than the US and also less slope. Today US rate LIBOR 3M is 1.11% and Euribor 3M is -0.25% and the US slope (2Y treasury vs 10Y) is 40bp positive while the EU slope (2Y German bund vs 10Y) is 12bp negative. The lower short-term rate level and the less yield curve slope is another factor that explain the lower profitability of the European banks comparing with US banks.

3.2. STRUCTURAL FACTORS

3.2.1. Scale and market fragmentation

The total number of financial institutions in the European Union fell by 2.6% in 2018 to 6,088 institutions, down by 2,437 (29%) since the crisis began in 2008. During the same period, the number of US banks has been reduced by 48%. Total assets held by banks in the EU amount $47 trillion[13], considering that EU GDP is $19 trillion implies that EU banking sector assets are 2,5x EU GDP. In the case of US banking industry, total assets amounts $18 trillion[14] which implies only 0.92x US GDP ($19.4 trillion).

US banks have a significantly higher scale compared to European peers while benefiting from a truly integrated single market. The top 5 US banks have on aggregate €2.9Trn loans in the domestic US market, whereas the top 5 Eurozone banks only have €1.9Trn loans in the Eurozone countries; meaning that the top 5 US banks have approximately 50% more loans in domestic markets than the top 5 Eurozone banks[15].

[13] European Banking Federation (2019) Facts and Figures. https://www.ebf.eu/facts-and-figures/
[14] Federal Reserve Bank of St. Louis (2020) Total Assets, All Commercial Banks. https://fred.stlouisfed.org/series/TLAACBW027SBOG
[15] European Banking Authority (2019) 2018 EU-wide transparency exercise. Retrieved February 20, 2020, from https://eba.europa.eu/risk-analysis-and-data/eu-wide-transparency-exercise/2018.

Banking returns are generally correlated to market concentration. As Chart 4 shows below[16], the higher the level of concentration in a banking market the higher the returns on assets. One way to look at concentration is through the Herfindahl-Hirschman Index (HHI) where the market share of each bank in a country is squared and then added together. The higher the HHI figure, the greater the level of concentration. By this measure, only two countries in Europe show evidence of having a concentrated banking market: Belgium and the Netherlands. Compared with the US, we find that on average, US are more concentrated than European countries.

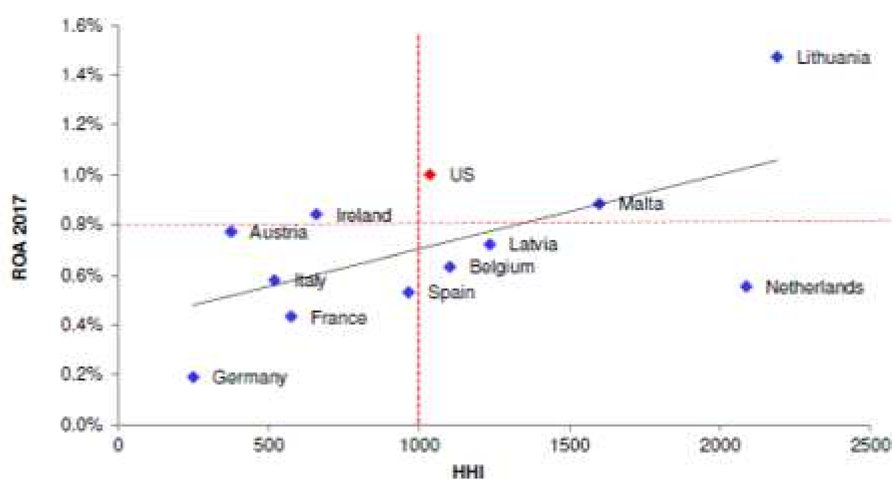

Chart 4: National banking sector HHI versus ROA 2017
Source: Deutsche Bank research

Banking consolidation in Europe is relatively difficult in the current scenario because: more than 10% of Euro area banks are still nationalized and being governments and politicians who manage these public banks; the banking union is incomplete, the Single Supervisory Mechanism (SSM) and the Single Resolution Mechanism (SRM) are working, but the European Deposit Insurance Scheme (EDIS) is not implement yet; and, there are national supervisory barriers and heterogeneous legal frameworks. As a result, there are limited synergies (costs, strategic, operational, etc.) available to gain in a cross-border transaction inside the

[16] Deutsche Bank (March 2019) Banking concentration research.

Euro zone. It is essential to complete the Banking Union, implementing a common deposit guarantee scheme (EDIS), and the capital market union.

To summarize, the number of banks and the size of the banking sector is much higher in Europe than in US, the lower consolidation of the European financial sector implies inefficiencies that justifies the lower profitability of European banks.

3.2.2. Capital markets efficiency

Capital markets are more developed in the US, with a larger proportion of medium-sized and large companies with capacity to access the markets relative to the EU. As Chart 5 shows below[17], Eurozone corporates remain heavily reliant on bank funding. US banks uses a fee model, offering funding solutions (equity and bonds placements) to clients in exchange for a fee, this business model do not consume capital for the bank and end up being more profitable.

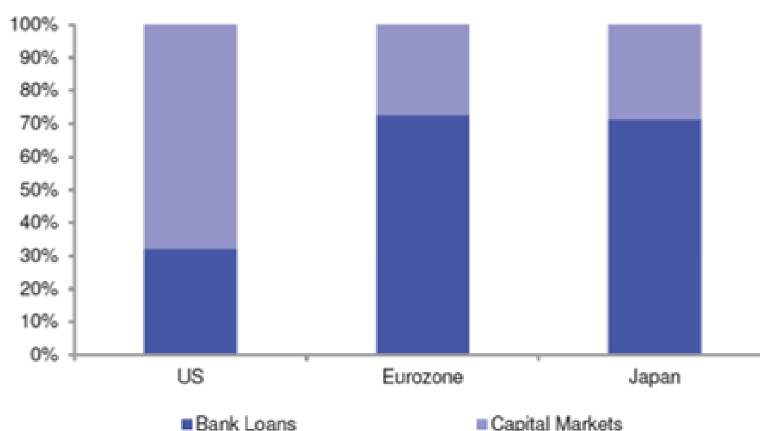

Chart 5: Corporates banking sources
Source: Deutsche Bank research

This implies that in US there is a further development of the investment banking business that is lighter on capital and has higher profitability than in Europe. The lower development of capital markets and securitizations in Europe has created a barrier to reducing the stock of non-productive assets accumulated during the crisis

[17] Idem footnote 16

(especially in countries like Greece, Portugal, Spain, Cyprus, etc.) penalizing the profitability of the European bank's balance sheets.

Additionally, US banks have greater market power and for the same service, US banks receive more fee than EU banks, and this explains why banking services are more expensive in the US than in the Euro area. The US banks with less banking assets than European banks have higher interest margins and are more profitable. And within the Eurozone, Spain is one of the cheapest country, offering the largest amount of free services through any channel.

3.2.3. Banking business model

US banks use capital markets more aggressively to evacuate assets, through securitizations and selling assets to the U.S. federal agencies or government-sponsored enterprises (GSEs): Federal Home Loan Mortgage Corporation (Freddie Mac), Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Banks (FHLBs).

In 2018, Freddie Mac and Fannie Mae bought a volume of mortgages equivalent to 46% of the new US single-family mortgage production. As Chart 6 shows below, both agencies have 45% of the total balance sheet of $10.8Tr[18].

[18] Freddie Mac (2019) Annual Report (10-K) 2019. http://www.freddiemac.com/investors/financials/pdf/10k_021320.pdf. and Fannie Mae (2019) Annual Report (10-K) 2019. https://www.fanniemae.com/resources/file/ir/pdf/quarterly-annual-results/2019/q42019.pdf

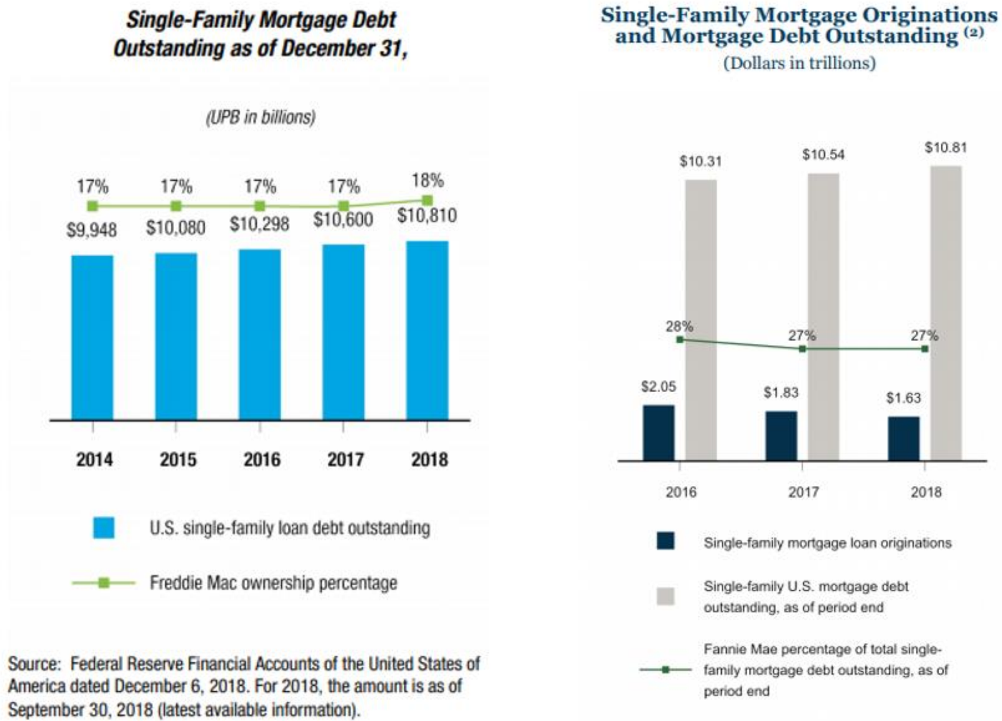

Chart 6: Freddie Mac and Fannie Mae mortgages portfolios
Source: Freddie Mac and Fannie Mae 2019 annual reports

Euro area banks have €4.3Tr[19] in total retail mortgage lending. Having a system of agencies in Europe with a 45% share, in line with the US, and taking into account an average RWA density of 19% for mortgage lending in Europe and an average CET1 ratio of 12%, would imply a capital release for the European financial system of €44bn (EUR 4.3Tr x 0,45= EUR 1.9Tr banks sell to agencies / EUR 1.9Tr x 0,19= EUR 367Bn of RWA banks liberate / EUR 367Bn x 0,12= EUR 44Bn of capital banks liberate , if agencies where stablished in Europe, banks will be able to reduce capital by EUR 44Bn), whilst maintaining the same CET1.

In the US banking model, securitization plays an important role. Securitization is a process that allows the bank to pack assets, structure Assets Back Securities (ABS) and sell them in the capital market with the target to liberate balance sheet and capital and increase profitability. The US banks use securitizations as a source of funding and as a tool to rotate the balance sheet and release capital. The volumes

[19] Idem footnote 15

securitized by US banks and by far much higher than the amount of balance sheet securitized by European banks.

As Chart 7 shows below, in the US market the volume of securitizations during the period 2017-2019 is above $600 billion annually, being collateralized loans, autos loans and mortgages the principal assets securitized.

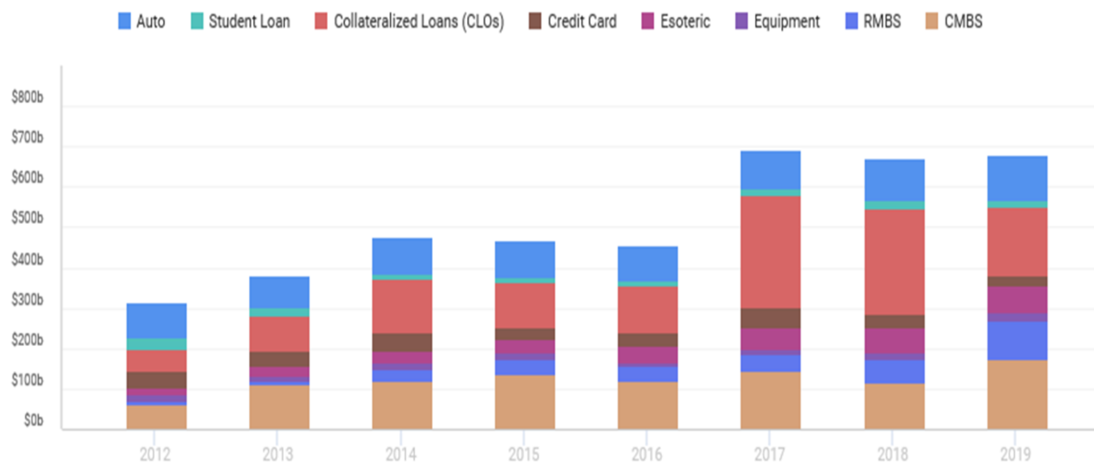

Chart 7: USD market volume of securitizations
Source: Finsight[20]

In Europe, as Chart 8 shows below, the volume of securitizations during the same period 2017-2019 is only is between 70 and 100 billion EUR annually, being collateralized loans and mortgages (residential and commercial) the principal assets securitized.

[20] Finsight is a data base of ABS's US market https://finsight.com/

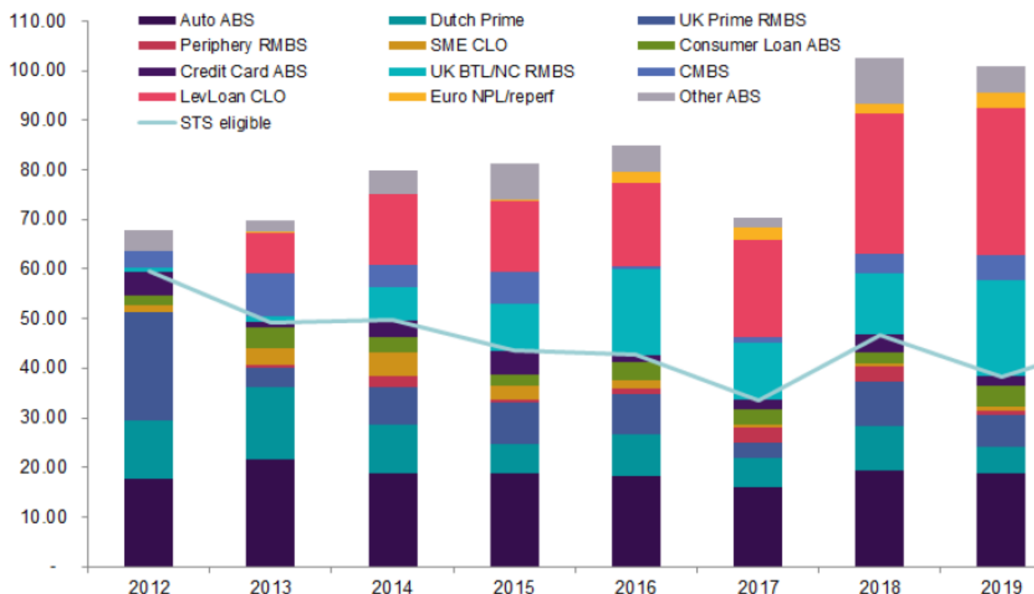

Chart 8: Euro market volume of securitizations
Source: NatWest Markets[21]

The result is an asset light US banking sector vs the heavier European banking model. The volume of securitizations and the availability of the US agencies permits US banks to have a higher asset rotation, which results in higher profitability.

3.2.4. Regulatory requirements

The increase in regulatory pressure in the Euro area contrasts with the relaxation trend in the US. In the US, as a consequence of the 2008 financial crisis, in 2010 the Dodd-Frank law was approved and this legislation implied the consolidated the number of regulatory agencies responsible for financial oversight and an increase of the amount of capital and liquidity that banks had to maintain as a cushion against market downturns. Dodd-Frank has been harshly criticized by the financial industry arguing that the capital and liquidity requirements were very costly and very negatively affected the profitability of the sector.

From the first moment, the Trump administration has tried to help the financial industry especially with the Economic Growth, Regulatory Relief, and Consumer Protection Act, which passed the Senate in March 2018. This new legislation is known as the Crapo Bill, since Mike Crapo (US Senator and chairman of the Senate

[21] NatWest Markets (January 2020) European Securitization Market Research.

Banking Committee) was who sponsored the bill. The Crapo bill is very much banking industry friendly and it is designed to roll back parts of the Dodd–Frank. The primary focus of the Crapo bill is to increase the asset threshold that banks must overcome before being subject to certain regulations and oversight. The Dodd-Frank threshold was set at $50 billion, above which banks would be considered "too big to fail." The Crapo bill has increased this threshold to $250 billion in assets. Banks that do not overcome this new threshold will not need to pass the FED stress tests, designed to estimate the impact a financial shock would have on a bank based on its risk exposure in relation with its capital and liquidity.

In the Eurozone, regulatory pressure is impacting negatively on banks' profitability. Banks supervision is now unique in the Eurozone since the creation of the Single Supervisory Mechanism (SSM) and, as explained before, regulatory capital demand has increased, in the period 2007-2019 European financial institutions have increased, on average, the CET1 more than double, from 5% to 14%.

Banks resolution is also common in the Eurozone since the creation of the Single Resolution Board (SRB) and this has implied two new regulatory requirements that negatively affect bank profitability.

First, all the Europeans banks have to contribute heavily to building the Single Resolution Fund (SRF)[22]. The target of SRF is to ensure the stabilization of the European financial system in case of crisis. The SRF is being gradually built up during the period 2016-2023 and reaching the target level (1% of the amount of covered deposits of all credit institutions within the Banking Union, around €60 billion) by 31 December 2023. IN 2019, 3,186 European financial institutions contributed €7.8 billion to the SRF, this brings the total amount in the SRF to €33 billion[23]. The average ROA of the European banks is 0.38% (see Table 1), which imply that contribute €33 billion to the SRF has an annual opportunity cost for the European banks of €125.400 million that is affecting negatively the profitability.

[22] Single Resolution Board (2020) What is the Single Resolution Fund?. https://srb.europa.eu/en/content/single-resolution-fund
[23] Single Resolution Board (2020) SRF grows to €33 billion after latest round of transfers https://srb.europa.eu/en/node/804

Second, the SRB has defined a Minimum Requirement of Eligible Liabilities (MREL)[24] that all the Europeans financial institutions has to comply with. The purpose of MREL is to build a solvency buffer capable to absorb losses if the financial institution is resolved, this is the so called bail-in. The MREL try to recapitalize a financial institution after a crisis without recourse to public fund, in other words, the MREL try to avoid the bail-out of banks using public money. The SRB has defined that, additionally to the CET1, need to have bail enable liabilities, which are Additional Tier1 (AT1), Subordinated debt (T2) and Senior Non Preferred (SNP).

In order to assess the cost of MREL, in the first column of Figure 2 is the outstanding volume[25] that the European banks have of bail enable liabilities, in the second column the subordination spread (spread vs SP) and in the third column the cost of MREL. To comply with MREL implies European financial institutions to incur in a €9,625 million annual cost, that is affecting negatively the profitability.

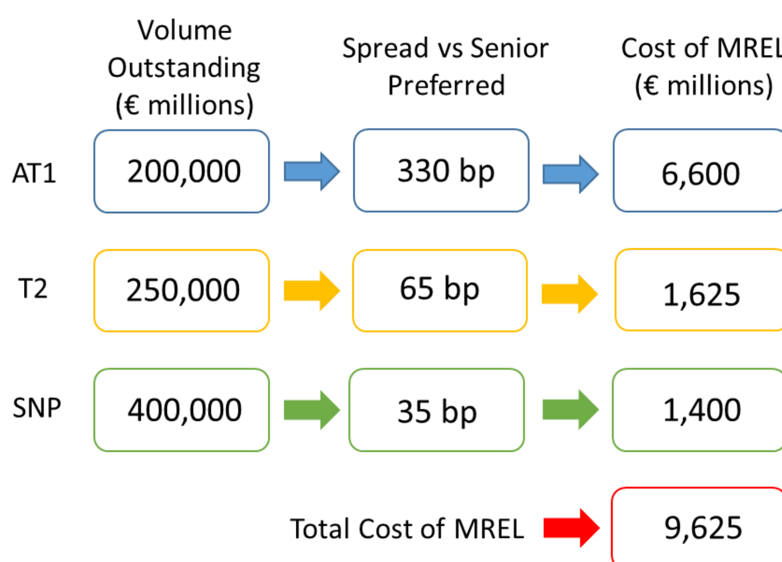

Figure 2: European banks cost of MREL
Source: Author' own elaboration

[24] Single Resolution Board (2020) MREL: Minimum Requirement for own funds and Eligible Liabilities https://srb.europa.eu/en/content/mrel
[25] Market data provided by Société Générale CIB and Barclays Capital Inc.

3.2.5. Legal framework concerning payments data sharing

In the EU the Payment Services Directive (PSD2) mandates banks to provide free access to regulated payment services providers (bank and non-banks alike) to the payments transactional data of the customer, with the client´s consent. Access to these transactional payment data creates opportunities to new online financial services offered mainly by non-banks that are competing with traditional banking entities. This is increasing the level of competition in the European banking industry and is affecting the profitability of the traditional financial institutions.

However in the US, there is no legal act comparable to PSD2, and therefore, American banks are not subject to such a strong level of competition from non-banks based on the large amounts of client data. This also determines the higher power of negotiation (alliances) of American banks with non-banks/Big-techs.

4. MEASURES TO IMPROVE THE PROFITABILITY OF EUROPEAN BANKS

There are several measures that European banks should implement to improve profitability and improve enterprise value. In the current market environment increase business volumes is not easy and with negative rates is almost impossible to enhance NII. One real lever that Europeans banks have in their hands to improve profitability is cost cutting and the best way to implement this target is through two strategies: digitalization and consolidation.

4.1. DIGITALIZATION

Digitalization is an important strategy of cost-savings and improve profitability for European banks, in particular those with high level of branches and employees. If they are able to implement state-of-the art IT infrastructure, to digitalize processes and reduce legacy systems wherever possible, they will have a better IT infrastructure that will allow them to increase and improve service provided to their clients. By doing this, banks will become IT companies or platforms.

Technology will be the ultimate frontline for differentiation, European banks need to accept emerging technologies and respond to major developments in order to achieve competitive advantage in the coming years. All global banks are strongly investing in technology, and this is reflected in their cost savings plans with some ambitious targets ahead. The incumbent European banks have several reasons to bet for digitalization:

- Consumer Needs: today banks' clients demand best-in-class services. Customer expectations are shifting rapidly, customers now days seek for accessibility (access anytime, anywhere; better security guaranty…), transparency (in terms of pricing/service levels/terms), simplicity (reduce steps and speed up processes) and personalization (tailored products, services, advice and advanced analytics).
- Technology: the "old tech" employed by incumbent banks is unable to deliver the client experience required for new banking and the old systems are expensive to operate and maintain.
- Regulatory Change: banking and financial services are a highly regulated industry and without digital transformation is very difficult to comply with the regulatory requirements. It is important to reach the right balance between allowing innovation to flourish and protecting customers and comply with regulation.
- Competition: to cope with competitive and technological change, new operating models and cultures are required, this change process is hard for incumbent banks but is necessary.

Before to analyze the digitalization strategies of European banks, it is necessary to assess the position of the European financial institutions in the new digital age through a SWOT analysis:

<u>Strengths</u>

- Banking License: Non-banks can provide any kind of financial service with the exception of taking deposits, in order for an institution to take deposits it is

necessary a banking license that is linked with multiple regulatory requirements, this is a clear entry barrier for new tech competitors.

- Scale: Banks have millions of clients and a huge amount of clients' financial data, this is a key advantage because customer loyalty is difficult to reach for newcomers and data lakes are absolutely necessary for Artificial Intelligence techniques and big data analysis.
- Trust/Brand: Trust is critical in any company and sector, but in the financial sector it is the most fundamental factor. Banks are trusted merchants, customers trust banks and leave their deposits, and banks trust companies and families and extend credit to them. An established bank brand is a source of trust, and creating that brand image takes a long time and is a challenge for newcomers.
- Access to Funding: cheap sources of funding are critical for banking business and the cheapest and more stable source of funding are retail customer deposits and only a bank with license has access to customer deposits. Additionally, to have access to wholesale funding banks need to have a solid public credit rating (provided by a rating agency – S&P, Moodys, Fitch…). Non-banks don't have access to client's deposits and, most of them, not have a public credit rating.

Weaknesses

- Legacy Systems: The problem with bank's legacy systems is that have been built with an old and unique architecture, so any change implies an impact assessment to ensure that the change does not impact other systems. Banks have great difficulties in enabling current systems to speak to new digital applications. Legacy systems are one of the biggest barrier for banks to achieve digital transformation.
- Key Talent Gap: Innovation process requires changing the skills and talent needed but this talent is in short supply and banks needs new human

resource strategies. According to PwC's 22nd Annual Global CEO Survey[26], almost 80% of the banking CEOs who responded saw skills and talent shortages as a threat to their innovation strategy, with 35% being "extremely concerned" and 44% being "somewhat concerned". Banks' lack of technology expertise is a significant threat to successful delivery innovation strategy.

– Regulatory restrictions: European banks and ECB are worry about the right balance between innovation and regulation. ”The challenge for regulators is to balance the obvious benefits that fintech innovations may have for growth and welfare with their potential risks. After all, the history of financial innovation is littered with examples that led to early booms, growing unintended consequences, and eventual busts" Benoît Cœuré (2018)[27].

Opportunities

– Better Customer Experience: Banks are pouring tremendous resources into improving customer experience. It is important to emphasize that better customer experience implies higher revenues. Customer experience imply accessibility, transparency, simplicity and personalization and innovation is the key factor to reach these targets.
– Lower Costs: Digital customers have a lower Cost to Income (C/I) and higher ROE, as Chart 9 shows below, based on a Morgan Stanley research, digital customers generate almost 20 perceptual points lower C/I and 8 perceptual points higher ROE.

[26] PWC (2019) Banking and capital markets trends 2019: Why banking and capital markets transformation is all about people. https://www.pwc.com/gx/en/ceo-survey/2019/Theme-assets/reports/banking-capital-markets-trends-2019-report.pdf
[27] "Financial regulation and innovation: a two-way street". Introductory remarks by Benoît Cœuré, Member of the Executive Board of the ECB, at a roundtable organized by FinLeap, Berlin, 14 March 2018.

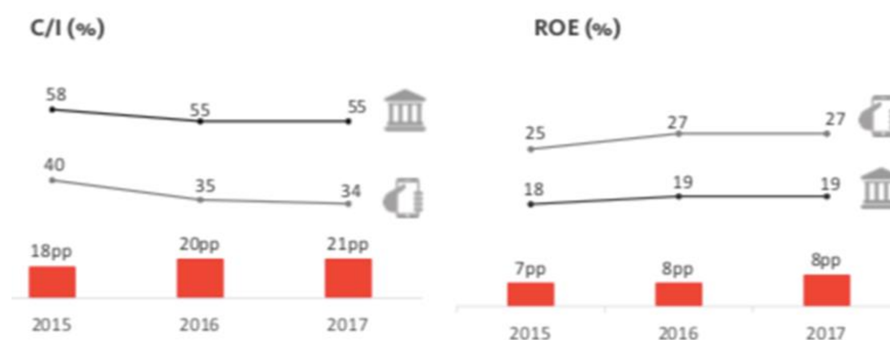

Chart 9: C/I and ROE digital versus traditional customers
Source: MSDW research[28]

- Risk Reduction: Technological innovation could greatly reduce risk in financial services, limiting operational risk caused by human error and cyber-risk. Cloud services could be more secure for banks than use on-premises environment. Based on Deloitte Consulting report[29], on-premises environment users and customers suffered more cyberattacks (average of 61.4 attacks) than those in cloud services (average of 27.8 attacks).

Threats

- New Entrants: In the last years Tech companies have made significant inroads into financial services industry. Now the banks has to compete with the "big tech" and the "fintech". Based on a Bank of America Merrill Lynch research[30], European banks under pressure, but not from big tech, big tech is more likely to sell services to the European banks than compete with them. Fintechs have a structural advantage over the European banks in the absence of legacy systems, it is simply cheaper and easier for a fintech to build new services than for a bank to respond.
- Cyber Attacks: Banks are increasingly relying on digital technologies to fulfill their innovation strategies but, at the same time, based on the increasing

[28] Morgan Stanley (June 2018) Banking Research: Digital versus Traditional Customers
[29] Linthicum, D. (2014, January 8). Clouds are more secure than traditional IT systems and here's why. Techtarget. https://searchcloudcomputing.techtarget.com/opinion/Clouds-are-more-secure-than-traditional-IT-systems-and-heres-why
[30] Bank of America Merrill Lynch (2019, November 18) European banks – don't fear the Libra. The corner. http://thecorner.eu/financial-markets/european-banks-dont-fear-the-libra/82844/

levels of cyber-security breaches, are facing new risks because many new technologies are not yet well tested to avoid cyber risk.

In order to stay relevant in the rapidly evolving financial market, Europeans banks need to become much faster, smarter and more efficient. There are several strategies that if implemented correctly will help European financial institutions to respond to digital disruption:

- Partnership: Could take form of acquiring minority stakes, setting up JVs with fintechs, setting up in-house venture fund or collaborate with fintechs, by providing sponsorship and balance sheet in exchange for technology and customer access. The main advantages for partnering are: enables opportunity to scale the business and increase distribution, relatively low risk strategy with low investment requirements, provides bank with access to customer flows it would have otherwise not seen. The main disadvantage for partnering is limited control over the platform.
- Acquisition: Direct majority acquisition of Fintechs platforms has two main advantages: imply a careful selection of the right platform and evaluating its suitability to the bank to realize synergies and allow growth and ensures full control and exclusivity over the platform. The main disadvantages for acquiring are: acquisition process might be competitive and costly, most of the financial profit goes to early stage investors and the potential cultural and integration challenges.
- Compete: There are banks executing ambitious projects of transformation from the "Bank of the Past" to the "Bank of the Future" and trying to reach a digital transformation in order to compete with the tech new entrants. Factors for successful implementation of digital transformation strategy include:
  - Senior leadership focus on long-term strategic priorities and lean organizational structure.
  - Culture that encourages transparency and entrepreneurship with accountability for execution with KPIs and the compensation structure aligned to the strategic objectives.

- Transparent business model with relatively simple business mix allowing full concentration on digital transformation.
- Ability to invest for the future with cushion of healthy existing returns.
- Modernization of the bank's IT systems and infrastructure allowing to have the full value of data and using data and technology to deliver new services and better consumer experience.

The main advantage for banks of digital transformation strategy is a proactive response to digital disruption by restructuring existing traditional business model and the main disadvantage is that requires significant investment in digital capabilities and change in cultural mindset.

4.2. BANK CONSOLIDATION

European banks need to tackle the cost and profitability issue. Banks need to focus and consolidate specific financial activities and in order to do so, they will need to focus on products and strategies that improve ROE, for example sale of non-core assets, focus on high margin businesses, merger of certain businesses, and partnership with specialists.

With increasing legislation and regulation in recent years, the optimal level of complexity for banks has changed. Today it is not good to be too complex and the balance has shifted in favor of specialized models. Banks should focus on specific products that offer a favorable ratio of capital consumption and earnings potential. The result would be the end of the traditional universal banking paradigm, with banks no longer attempting to do everything, everywhere.

Banks in Europe should consider consolidation or increase of strategic cooperation and/or partnership in order to improve profitability. This strategy will allow specialized businesses (Custody, Asset Management, Insurance, Consumer Finance, Payments, Cards…), to gain scale in order to compete and lower the cost structures, create value through synergies, increase profitability and reduction of capital consumption. Examples of these strategies are the agreement between Santander Bank and Crédit Agricole to merge their custody business and the Bancassurance partnership between Lloyds and Schroders.

Consolidation can be either domestic or cross border; domestic consolidation is an essential measure for substantial cost saving while cross border consolidation allows banks to growth via mergers and acquisitions to lead to greater economies of scale and, therefore, higher profitability since it will deliver stronger revenue synergies.

For European cross border consolidation it is absolutely necessary to move forward the Banking Union, but today there are some relevant elements missing. The ECB released its Fourth Report on Reducing NPLs in June 2019, although the report sets good progress in the development of the Banking Union, it highlights the need to build the Common Backstop and the EDIS in order to develop and integrate a complete Banking Union. There are other key issues beyond Banking Union that are still unresolved, the following aspects are obstacles for European consolidation and need to be resolved:

- Legal and fiscal specifics: tax systems, bankruptcy rules, credit reference schemes, collateral rules...
- Consumer protection: harmonization of consumer protection legislation.
- Product differences: product specifics such as interest rate fixation (fixed/floating or amortizing/bullet)
- Legacy IT systems: existence of different IT systems with high integration risk.

Rating agencies generally view banking consolidation, both domestic and cross-border, as positive for credit rating for several reasons: stronger franchise to support higher credit rating; higher recurring earnings base; significant value creation through cost synergies; potential cross selling opportunities resulting in significant revenue synergies; cost of funding improvement; further geographic diversification and product diversification, and greater regulatory scrutiny. The main disadvantages observed by credit agencies are: execution risk; increased complexity of banking groups; and challenge to adjust capital ratios and TLAC / MREL buffers in order to support rating uplift.

Politicians and regulators still do not agree on the value and need for European cross-border consolidation in the banking sector, though regulators are generally in

favor of it, while politicians are considered to be more protectionist. Both politicians and regulators draw advantages and disadvantages of consolidating the banking sector in Europe.

Relevant actors have opinions and views in favor of European cross-border consolidation in the banking sector and point out the advantages:

- Sector optimization: "Sector is overcrowded and in significant need of consolidation" (Mario Draghi – President of ECB).
- Size matters: "There is a relationship between scale and the capacity to undertake the investments that are needed to improve technology and be competitive, especially in certain business models" (Bruno Le Maire – French Finance and Economy Minister).
- Profitability gain: "I think the message that is being sent across is that if you cannot guarantee profitability with your business model then you have to think about mergers as a possibility for you" (José Maria Roldán Chairman – Spanish Banking Association).
- Gain scale to empower Europe: "If euro zone member states are not capable of taking certain steps forward in the coming months, we risk weakening the euro and seeing new fractures emerge in the euro zone; the euro zone will not survive growing economic divergences between member states. We have to equip ourselves with the instruments to reduce the divergences" (Bruno Le Maire – French Finance and Economy Minister)

But also there are other relevant people which have opinions and views against of European cross-border consolidation in the banking sector and point out the disadvantages:

- Employee restructuring: "I don’t understand how a Social Democrat can try to engineer such a merger when it’s clear it will cost at least 30,000 jobs” (Frank Schaffler – Bundestag Member).
- Too big to fail: "Negative side effects of such a merger could be substantial, creating a bank that is too systemic to fail and too complex to manage” (Isabel Schnabel – Member of the German Council of Economic Experts).

- Big European banks are not ready yet: "Banks are still rebuilding after the global financial crisis. Progress at a region-wide level is happening – the European Banking Authority's latest stress test results showed this. But it is slow, and banks want to avoid big M&A before they have achieved significant improvements in profits and dividends" (Vicki Cockbain – Aberdeen Standard).
- Too complex: "Banking mergers are just very hard to get right. The RBS/ABN Amro debacle of a decade ago will no doubt still provide a cautionary example to ambitious chief executives" (Vicki Cockbain – Aberdeen Standard).

5. CONCLUSIONS

After the analysis and research carried out in this TFG, we conclude that European banks are undervalued in relative terms with US Banks because are less profitable as a consequence of:

- Macro factors: real GDP growth, short-term rate level and the yield curve slope are positively correlated with banking performance and in the last 10 years the EU countries have had lower GDP growth, lower interest rates and less slope in the yield curve that US.
- Structural factors: the inefficiencies in the European financial sector as a consequence of a lower consolidation comparing with US; capital markets are more developed in the US allowing a banking business that is lighter on capital and has higher profitability than in Europe; volume of securitizations and the availability of the US agencies permits US banks to have a higher asset rotation, which results in higher profitability; the increase in regulatory pressure in the Euro area contrasting with the relaxation trend in the US; and in the EU the Payment Services Directive (PSD2) mandates banks to provide free access to regulated payment services providers creating a strong level of competition from non-banks.

There are several measures that European banks should implement to improve profitability and improve enterprise value, but in the current market environment

one of the most efficient measure to improve profitability is cost cutting and the best way to implement this target is through two strategies:

- Digitalization: is an important strategy of cost-savings, improve profitability and is critical to achieve competitive advantage in the coming years. Partnership with fintechs could be the best strategy for European banks to respond to digital disruption. European banks need to digital transform of existing traditional business model but this requires significant investment in digital capabilities and change in cultural mindset.
- Consolidation: European banks have to consider consolidation or increase of strategic cooperation and/or partnership in order to improve profitability. Domestic consolidation is an essential measure for cost saving while cross border consolidation allows banks to have greater economies of scale and stronger revenue synergies, improving profitability. For European cross border consolidation it is absolutely necessary to move forward the Banking Union, but today there are some relevant elements missing.

During the execution of this TFG the Covid-19 crisis erupted. Before to conclude this research is absolutely necessary to summarize what it has happened until the delivery date of this report and to assess how the consequences of the pandemic may affect the previous conclusions.

Originally initiated in China, the Covid-19 outbreak rapidly spread into Europe and to the US later, becoming a global pandemic. Current number of cases globally amount to 2.4m, with a dead toll of c.170,000. In most of Europe, lockdowns will be in place until late April or even mid-May. In the US and UK social distancing measures started later than in Europe, so slow down the virus expansion will take longer. While scientists estimate that it will take at least one year to make a Covid-19 vaccine available, countries around the world are working to “flatten the curve” preventing healthcare systems from becoming collapsed, at the same time, massive tests should help to control and slow down the virus expansion.

The Covid-19 crisis is generating an unprecedented supply-demand shock that will trigger a sharp global recession. Incoming data confirms the devastating effect of

the pandemic. In Europe, PMI for March fell to 29.7, the lowest level since the data started in 1998. In the US, March services PMI declined to 39.8 and Non-Farm Payrolls declined by 701k and unemployment rate rose to 4.4%. Economist expect a major global recession in 2020, last IMF figures show a global GDP growth of -3.0%, Eurozone -7.5%, and US -5.9%.

Central Banks have responded with extraordinary monetary and fiscal policy measures, with two main objectives: prevent the dislocation of the capital markets and business support. Timing and depth of the response have varied between Europe and the US:

- On the Monetary Front: the ECB has defined a Pandemic Emergency Purchase Program (PEPP) for €750b and liquidity facilities for financial institutions through an improved TLTRO, and the FED has cut interest rates to zero, has improved the Quantitative with unlimited volume and increased the assets classes and has provided huge liquidity facilities for financial institutions.
- On the Fiscal Front: European countries have provided financing guarantee programs (not very coordinated) and the EU has announced a €500b plan including access to the ESM’s facility, additional EIB guarantees and a new fund to support employment protection schemes. The US has announced a $2.5T plan including direct aid, assistance, and loan guarantees to small, medium and large-sized business; special provisions to industries deemed important for national security; and expanded unemployment benefits and other direct support for households. A way to compare both plans is through the fiscal cost: the EU's estimated fiscal deficit for 2020 is c. 7% (vs 6.2% in 2009) and US estimated fiscal deficit for 2020 at c. 17% (vs. 9.8% in 2009). US's fiscal response is by far much powerful than the European one.
- On the Bank Regulation Front: the ECB expects that banks do not pay dividends (unlike in the US) nor undertake share buy-backs at least until October 2020.

Decisive intervention by central banks and governments has reduced market extreme volatility. Uncertainty and fear seem to have peaked, reducing downside risks and marking the first step on the road to recovery:

- Equities: S&P 500 touched its lowest level of 2,081pts on 23 March after accumulating a 34% fall since the outbreak, however, is now +36% up from the lows, standing at 2,823. EuroStoxx reached its low on 18 March at 2,385 accumulating a 38% fall since the outbreak in Europe, it is now +19% up since the lows, standing at 2,835.
- Rates: 10y UST yield went as low as 0.32% in early March but, after the Fed unlimited QE they have effectively yield-controlled the US curve, currently 10y UST at 0,58%. In Europe the same movement, 10-year Bund yield hit an all-time low at -0.91% in early March, today it seem somewhat more stable at -0.49%.
- Sovereign risk premiums: in Italy and Spain are at 249bps and 137bps today vs. 128bps and 65bps pre-Covid lows, but have been as high as 281bps and 146bps at the March peak.
- Credit index: in the US the Credit Default Swap Index (CDX.IG) peaked on 20 March at +152pts from the lows of 40/50pts prior to the outbreak, widening +107bps, standing at 91 now. In Europe, the iTraxx Main index peaked on 18 March at +139pts and currently is at 90.
- FX: USD appreciated against the Euro at the beginning of the crisis reaching 1.06, now the EUR is holding off a little better, trading at 1.0830. The Emerging Markets currencies have been hit the hardest, particularly the Brazilian Real and the Mexican Peso (both 30-40% down vs the USD).

The banking sector has been one of the most heavily impacted by the Covid crisis, but also at the heart of policy response to support the economy. Banks are an essential part of the solution, channeling government aid to companies and families, and looking for ways to meet the financing and liquidity needs of their clients as a result of the crisis.

But, for the time being, the Covid crisis has further increased the valuation differences between American and European banks. In the US the KBW Nasdaq Bank Index almost halved initially falling from 110 to 56pts on 23 March but has recovered 23% from the lows, standing at 69pts today. In Europe, the EuroStoxx Banks Index has also almost halved since the outbreak from 102pts to 50pts on 17 April, no recovery so far vs US banks rebound. There are several factors, related

with the Covid crisis management, that explain the increase on valuation differentials between EU and US banks:

- Dividends: while European Banks have been asked by regulators to cancel their dividends for 2019 and 2020, US banks have so far provided comfort on future dividend payments although they have cancelled their buyback programs. This could potentially make US banks more attractive vs European entities from a dividend yield perspective and potentially allow them to maintain a premium valuation vs European financial institutions.
- Stimulus packages: the decisive action of the US government and the FED and the greater size of the stimulus package is likely to allow the US economy to achieve a quick rebound whereas the perception within the EU is that several European countries might not have the financial capacity to afford such stimulus sizes unless there is a more robust EU wide solution. This could also have an impact on the pace of the economic recovery in Europe and affects negatively European banks valuation.

We conclude that we have reached the project objective: to demonstrate how the low profitability of European banks relative to their U.S. counterparts explain why European banks are undervalued in relative terms with US Banks. Because the Covid crisis, both US and European banks profitability will be reduced because a negative performance of NII and higher credit losses, but for the reasons explained, US banks will continue to generate higher ROE which should also allow them to increase the premium valuation vs European banks.

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