Are small or mid size banks more profitable than large banks? How do banks in different regions of the world perform in economically difficult times? 352 banks in Asia, Europe and America are analyzed to illustrate performances differences regarding size of total assets and regional focus on the world. The study also considers the composition of RoE and the influences of the individual factors on profitability. Finally RoE is compared with CIR and Cost of Equity on a global scale.

Data Collection in the study

In order to calculate Return on Equity (ROE) and Cost-to-Income Ratio (CIR) the data of 352 listed banks covering the period from 2008 to 2017 is used. However, in order to enhance the timeliness of the data, data reported in March 2018 was retrieved for the 9% of banks, which have fiscal year ending in March. The financial figures, listed in US dollars, were retrieved from Thomson Reuters Eikon Datastream. For the purpose of this analysis, banks with the highest market capitalisation were selected. However, the sample does not represent the top 352 banks with the highest market capitalisation, as some were not considered due to the low quality or lack of data necessary to enhance the objectivity of the research results. This study draws from a global sample. The final sample comprises 54 countries. In addition to ROE and CIR, Cost of Equity (COE) was calculated for 265 banks.

Historical Development of ROE and CIR in the Banking Industry from 2008-2017

The period before the financial crisis, which started at the end of 2007, was very profitable for banks. Kapoor\(^1\) provided several reasons for the inflated level of returns prior to the crisis: firstly, high rates of return were a result of relatively high leverage, as banks were operating with a significant share of borrowed funds. Secondly, overblown profitability ratios resulted from shifting assets to the trading book, and, for example, securitising them. This lowered the amount of capital required to be held against the assets. The less capital a bank held, the higher rate of return it had.

In addition, an increased maturity mismatch contributed to an increase in returns. Banks were lending long-term at a higher rate but financing their operations with cheaper short-term borrowing. This increased the risk level and made the banking industry vulnerable to liquidity disruptions. Finally, banks usually compensate higher risk taken by higher gains. Following this logic, American banks were investing in subprime securities, worsening the asset quality but generating higher income. As a result banks managed to produce a double-digit ROE. For example, according to McKinsey & Company the average ROE in the US in 2007 was 11.4% and even reached 16.7% in Europe. However, banks faced consequences for engaging in such profitable but occasionally questionable activities, and, as a result, the financial sector faced a new reality in the second half of 2007.

The mortgage market crisis in the US significantly weakened the positions of local banks. Moreover, upheaval in the US subprime market in 2007 quickly expanded across the global financial industry. It resulted in losses and write-downs of low quality assets, falling equity prices and soaring credit default swap spreads. The government takeover of Bear Stearns investment bank and the eventual bankruptcy of Lehman Brothers led to the increased mistrust between financial market participants. For some banks, the problem of liquidity became an issue of staying solvent. Governments in the US and numerous European countries were forced to provide support to troubled banks in order to sustain the already fragile state of the financial system. Countries that were not in immediate turmoil during this stage of the crisis experienced worsening financial market conditions.

Indeed, the global financial turmoil led to the shrinkage of profitability. As Figure 1 shows, in 2008 the median ROE of the global banking industry fell to 10.8%. Moreover, the average ROE was only 8.7%. A significant difference of 2%, or 20% of the median figure indicates that numerous banks experienced abnormally low returns. Since 2009 no significant deviation between average and median figures has been observed. After 2008 there were four years of moderate growth that brought the median ROE to 11.8% in 2012. However, since then the median indicator steadily declined year by year and reached 9.9% in 2016. The first positive change was observed in 2017 with an increase of 0.3%.

The interquartile range dropped by half – from 12% in 2008 to 6.2% in 2017. This indicates that the number of banks performing abnormally declined. For example, while 32 banks had a negative ROE in 2008, by 2013 this number decreased to thirteen, and in 2017 only eight banks experienced negative financial results. At the same time, the third quartile figure - separating the top performers - declined from 16.2% in 2008 to 13.8% in 2017.

---

Even if the level of ROE, depicted in Figure 1, was far below the natural double-digit pre-crisis levels, it was still relatively high. However, as was previously mentioned, the crisis did not impact all countries with the same degree of intensity or within the same time frame. In addition, economic peculiarities of regions play a significant role. For the purpose of an in-depth analysis, the sample is divided into five regions: Asia-Pacific (AP), Europe (EU), Latin America (LA), North America (NA) and Middle East Africa (MEA). Figure 2 illustrates the regional trends of ROE development.

As shown in Figure 2, the median ROE of banks in North America fell to 6% while the average dropped to 2.5%. The poor financial performance of some banks, induced by the financial crisis, skewed the average figure. Banks in Europe, the second mostly suffered region, managed to reach a median ROE of 9.7% and an average return of 7.2%. These figures are far below the above-mentioned pre-crisis ROE of 16.7% in Europe. The North American region managed to improve its profitability within four years and the median level of ROE has hovered around 9% ever since.

Following the financial crisis, the median ROE of 71 European banks continued to deteriorate until 2013. Between 2011 and 2013, the ROE was floating between 6.2% and 7.3%. Cost-cutting initiatives allowed banks to improve the ratio to 6.9% in 2014 and 8.7% in 2017. Figure 2 illustrates that Europe experienced a significant and permanent spread between median and average numbers. The data was unevenly distributed and numerous regional outliers were diminishing the average level of ROE. The trend of banks’ ROE development in the MEA region was relatively flat. The median ROE was fluctuating around 13%.
The region with the highest ROE turned out to be Latin America. At the same time, it is a region with an uneven distribution of returns, as during the first five years of the analysed period outperforming banks brought the average ROE in the Latin America region above the median level. During the crisis in 2008, the median ROE of banks in Latin America reached 19.5% and even increased to 21.7% in 2010; it was twice the median return of the global banking sector. Afterwards, a period of ROE contraction began. Within a period of seven years the median ROE decreased by 5.7% to 16% in 2017. ROE development in Latin America is impacted by regional economic instabilities. Asian-Pacific region experienced ROE growth from 2008 to 2012. Its median ROE increased from 10% to 13.9%. Since then, however, a downward trend began and the median ROE decreased to 10% in 2017.

As can be observed, regional measurements of ROE differ tremendously. Moreover, each region itself is not homogenous. Figure 2 provides an overview of trends and demonstrates that the average ROE of the global banking industry, depicted in Figure 1, is impacted by regional variations and data aggregation.

Figure 3 depicts the development of CIR in the banking industry during the period 2008-2017. Banks’ worst performances occurred in 2008. During the crisis period, banks experienced a contraction of income accompanied by additional litigation and restructuring costs. In 2009 the situation normalised, the indicator fell by 5% and bank efficiency increased. During the rest of the years in the analysed period, the median CIR of the banking industry fluctuated between 56% and 59%. In addition, there was no discrepancy between the average and median CIR.

A significant spread between these indicators occurred only in 2008. In 2008 18 banks (5.6% of sample) had a CIR above 100%. Furthermore, a quarter of banks had CIR above 73% in 2008. However, another 25% were efficient and produced income that was at least twice higher than...
their expenses. Throughout the whole period the CIR inter-quartile range was consistently around 20%.

Figure 3: CIR in the global banking industry 2008-2017

Regional differences in banks’ efficiency were also observable when considering the CIR indicator, as shown in Figure 4. Banks in the MEA region proved to be the most efficient. Their CIR was at its lowest in 2009 at 40% and never exceeded 49%. European banks were the most inefficient. Their CIR was always above 60%, reaching its highest point of 68.3% in 2013. Moreover, in comparison to other regions worldwide, Europe experienced the largest difference between median and average CIR.

Banks in North America performed in a relatively stable manner throughout the time frame in question, which resulted in a CIR of 64%. Only in 2008 a 10% spread between the median and average ROE indicated that some banks had very high expenses as a consequences of the crisis. Banks in Latin America experienced the most unstable CIR, which noticeably fluctuated on a yearly basis. Asian-Pacific banks had the narrowest range of CIR fluctuations. The regional minimum was 50.5% in 2010 and the maximum was 53.6% in 2014. However, in 2008 and 2009 the average CIR level was significantly above the median, which indicates that some banks had a CIR which was abnormally larger than the median.
Figure 4: CIR of banks per region 2008-2017

![CIR of banks per region 2008-2017](image)

Source: Own illustration based on data retrieved from Thomson Reuters Datastream (2018)

Decomposition of Return on Equity and Cost-Income Ratio per Component

In order to determine what has influenced the level of ROE and CIR, the change of their main components should be analysed.

Figure 5 represents median annual growth rate of net income and average shareholders’ equity, the core components of the ROE ratio, in the banking industry in 2009-2017.

Figure 5: Annual growth rate of average shareholders’ equity and net income in the banking industry 2009-2017

![Annual growth rate of average shareholders’ equity and net income in the banking industry 2009-2017](image)

Source: Own illustration based on data retrieved from Thomson Reuters Datastream (2018)

One of the main factors that hindered the improvement of ROE was the increase in common equity. High growth rates in common equity did not allow high ROE ratios.
by banks was around 9.6%. It had its peak in 2010 as the banks had to restore the deteriorated capital positions. As, for example, 70 out of 323 banks, or 21.7% of the sample, experienced a decrease in average common equity in 2009 in comparison with the previous year, while during stabilized business conditions in 2013-2017 the average number of banks with a decrease in equity was only 6%.

Since 2010 banks had to continue to expand their capital base following the introduction of Basel III. Basel III requests an increase in regulatory equity, stricter requirements to the quality of capital constituents and determination of deductibles, introduction of countercyclical and capital conservation buffers, liquidity and stable funding ratios, and additional capital required for G-SIBs.

Banks had to increase Core Tier 1 Capital from 2% of risk-weighted assets in 2012 even up to 9.5% of risk-weighted assets (if both capital buffers are considered) in 2019. In addition, there are 1-3.5% of risk-weighted assets surcharges for large and important financial institutions. Moreover, Core Tier 1 capital is nowadays limited to shareholders equity and retained earnings, does not include goodwill and deferred tax assets, and additionally several downward adjustments are applied to it.

Ernst and Young stated that Basel III leads to higher operational costs, losses due to assets relocations, additional margin compression, constrains in growth and economies of scale. All in all it puts pressure on profitability and efficiency as well. Fostering stability of the financial system, Basel III, whose capital requirements had to be implemented by banks till 2019, restrained improvement of the return on equity and CIR.

On the income side, a moderate 4% growth in 2009 was accompanied by a 27% jump in 2010. However, the difficulty was to determine the annual growth of income if a previous year figure was negative. In this case the growth rate was calculated as a ratio of absolute increase to absolute value of the previous year negative income.

Many banks improved their income, as, for example, 37 banks in 2009 had a negative net income, while in 2010 the number decreased to 17. In 2008 and 2009 banks' income was skewed due to the crisis-related one-time effects and high costs of risk. It was natural that the income growth rate decelerated after 2010 and came back to a range of 10-12% in 2012-2014. In 2015 and 2016 the next downward trend of income was observed. In 2017 the annual growth of income was higher than growth in equity and resulted in a slight increase in ROE.

As net income comprises several components, the ROE can be decomposed as the sum of the ratios of corresponding elements of net income to the average shareholders' equity. The contribution of the components to ROE is illustrated in Figure 6. The sum of the ROE components does not equal the median ROE of banks; minor components, which are not directly connected with the operational activity of a bank,

---

5 Ernst and Young 2012. Basel III – challenges, impact and consequences, p. 8
as minority interest and preferred dividends, that decrease the numerator factor of the ratio, were not considered. The ratios of components to equity were shrinking due to an increase in equity, however the graph depicts clearly how the contribution of each component changed on a yearly basis and in comparison to each other.

Figure 6: Decomposition of ROE of Banks 2008-2017

The contribution of net interest income to ROE was steadily decreasing from 2009 to 2016.

Scrutinizing the numerator factor of the ROE ratio, it is to notice that the contribution of net interest income to ROE was steadily decreasing from 2009 to 2016. During an eight-year period its share fell from 33.2% to 24.5% and stabilized at this the level. One of the reasons behind was the compression of net interest margin provoked by low interest rate environment. In order to prevent a long-lasting recession after the financial crisis, central banks of countries in North America, Europe and Asia-Pacific lowered their short interest rates. In addition, long term interest rates also decreased based on vague global economic perspectives and high public and private debt.

For example, in 2016 and 2017 the yield of the 10-year government bond was between 0% and 1% for several countries in Europe, and even below zero for Japan and Switzerland. Contraction of interest margin contributed negatively also to the level of CIR. As depicted in Figure 7, between

---

6 Matthes 2014. The low interest rate environment. Causes, effects and a way out, p.3
7 OECD 2018. OECD.Stat
2011 and 2015 the median annual growth rate of net interest income was below the growth of non-interest expenses. In addition, two downward trends in the growth rate of net interest income, from 2010 to 2013 and from 2014 to 2016, were observed. This confirms difficulties the banks experienced in generating interest-related revenues. Though in 2016 and 2017 growth rate of net interest income exceeded the growth of expenses and thereby contributed to the reduction of cost-income ratio.

**Figure 7: Cost-income ratio and median growth rate of net interest income, non-interest income and expenses in the global banking industry in 2009-2017**

![Cost-income ratio and median growth rate of net interest income, non-interest income and expenses in the global banking industry in 2009-2017](image)

Source: Own illustration based on data retrieved from Thomson Reuters Datastream (2018)

The contribution of non-interest income to ROE was following a similar downward trend (Figure 6). However, the ratio of non-interest income to average shareholder’s equity declined due to the increase in the equity amounts, while the importance of non-interest income in the banks’ operations only increased. It can be proved by the ratio of non-interest income to net interest income. It was at the level of 58.8% in 2008 and increased to 62.4% in 2017.

A non-interest income growth slowdown was observed in 2010-2011 and assumed to be connected with the general decline of financial and business activities worldwide. This led to a deterioration of CIR amidst expansion of expenses (Figure 7). During the following four years, a high growth of non-interest income allowed to keep CIR at a stable level and to compensate for the deceleration of the net-interest income growth. As most of the measures to increase non-interest revenues were implemented during 2012-2015, a slower growth of non-interest income was observed afterwards.

In order to provide a clear picture of changes in ROE and CIR, the change in the contribution of income components should be compared with the constituents that decrease the return rate.
The first after-crisis years, namely 2008 and 2009, were characterized by the highest share of non-interest expenses. On the one hand, it was in line with the higher non-interest income, on the other hand, it can be explained by high restructuring, goodwill impairment and litigation expenses the banks had to bear. Afterwards, in order to improve financial performance, banks were trying not only to increase the contribution of income but to reduce the costs. It is to mention that Figure 7 reflects the median growth rates of corresponding indicators. There were significant differences in the performance of individual banks. Therefore, along with the higher median growth rate of expenses in 2014, the median CIR stayed almost unchanged. It is due to the high spread between average figures and the effect of data aggregation.

Analysing ROE in the banking sector from 2008 to 2017, showed a high importance of costs. According to Figure 6 loan loss provisions were especially significant during 2008-2009. In 2008 LLP reached 7.2% of average common equity; it was more than 30% of net income. A 1.13% increase of the ratio of net revenues to equity and 2% decrease in the share of expenses in 2009 was vastly absorbed by growth of loan loss provisions. LLP jumped to 9.3% of ASE. Having overcome the crisis period, banks started gradually to decrease LLP: first to 6.5% of equity in 2010, to 4% level in 2011-2012, and to 2.7-3.4% in 2013-2017. A high growth rate of net income in 2011 and 2012, depicted in Figure 5, was for a large part attributed to decrease in costs of risk. In the stabilized economic conditions the probability of counterparties’ default decreased and therefore the ROE benefited from lower risks.

The ratio of tax to equity was not fluctuating significantly, as it is correlated with the net income amount and obviously followed the same pattern. However, it is to mention a tax reform implemented in the end of 2017 in the USA. It had significant influence on the net income of some banks’ business with operations in the USA. Therefore, in order not to detract from objectivity and avoid discrepancy especially while comparing American banks, a second calculation of ROE, adjusted for one time effects, was realized.

One time effect took place in the 4th quarter of 2017. Banks had to adjust their balance sheets due to the “The Tax Cuts and Jobs Act” signed in December 2017. This tax reform is going to be beneficial for the banks in the long run, as it reduced corporate tax from 35% to 21% and allowed a repatriation of foreign income with a one-time tax. Lower tax should lead to a higher future ROE due to the higher net income. Nonetheless, in the 4th quarter of 2017 reduction of the tax led to a remeasurement of a deferred tax asset. Hence, banks had to account an additional income tax effect as an extraordinary item which has subsequent effect on the net income and ROE respectively.

Citigroup9 had to record $-22.6 billion non-cash charge, that decreased net income from $15.6 billion to $-6.8 billion. As the result positive ROE of 7.6% turned into -4.1%. Analogi-

---

cal downward adjustment was applied to numerous banks. High reduction of ROE in 2017 due to the American Tax reform experienced Goldman Sachs Group: 6% drop in ROE due to the one-time effect. In addition, also several non-American banks but with the business on the American territory had to adjust their accounts, for example Credit Suisse, Barclays and Deutsche Bank. Moreover, if this reform hadn’t taken place in 2017, Deutsche Bank would have finally produced a positive ROE in amount of 1% after two years of a negative performance result. In reality it had to report -1,2% ROE.

**Comparison of Return on Equity and Cost of Equity in the Banking Industry 2008-2017**

Of course, a ROE of 10% in the global banking industry and its positive dynamic can be considered as a sign of financial recovery after a period of severe business conditions. As Figure 8 shows, only half of the banks considered was able to create value in 2017. The median ROE-COE spread in this year was at the zero level. At the same time for 25% of the banks this spread excelled only 2,8% level. The year of 2012 turned out to be the best year in the analysed period in regard to creating value in the banking industry. ROE of banks was 2,3% higher than cost of equity, and even the average figure in amount of 2% caught up with the median.

**Figure 8: RoE–CoE spread of banks 2008-2017**

It is not a surprise that 2008 was a year of value devastation for banks. Half of the banks didn’t manage to produce return that would be enough to cover the COE. Moreover, for a quarter of the sample the return was at least 5% lower than the return that shareholders expected. 2008 can also be called a year of contrasts, as another quarter managed to generate a return that was 5,4% above the shareholder’s expectations. In other words, the interquartile spread was more than 11%. Nevertheless, it was gradually decreasing afterwards and narrowed to 5,8% in 2017.
Regional differences in profitability described in the previous section led to corresponding discrepancies in ROE-COE spread. Figure 9 reflects the median spread between return on equity and cost of equity per region. Firstly, it is to notice that the spread of all regions converged towards zero. Only banks from Latin America and Asia-Pacific regions created value for shareholders in 2017, though the amount was really small – below 1%. North American and European banks’ ROE was less than 1% below COE. The spread of MEA region’s banks was not analysed on the regional level in 2017 due to a lack of data. Almost the same performance result was observed in 2016: the spread between ROE and COE of all five regions deviated from zero by not more than 0,5%.

Figure 9: ROE-COE spread of banks per region in 2008-2017

![Graph showing ROE-COE spread per region from 2008 to 2017.](image)

Source: Own illustration based on data retrieved from Thomson Reuters Datastream (2018)

However, banks' performance was not so homogeneous in the first half of the analysed period. During 2008 and 2011 Latin American region had the highest spread between ROE and COE in the range between 3,5% and 6,9%, which is explained by the high ROE above 20%. Significant decrease in profitability accompanied with the rise of equity risk premium due to political and economic instability in the region wiped out the positive difference between return and cost of equity. In addition, a high risk free rate in the countries of the region resulted in a high COE during the whole period.

MEA region was characterized by the most volatile spread. It can be partly explained by a deviation in the number of banks included in the sample. Due to the non-availability of stocks’ price information the sample is 30% smaller in 2008-2010. Nevertheless, considering that most of the banks in the region generated a double-digit return during the analysed period, it exceeded the cost of equity only by a minor amount. In 2012 ROE exceeded COE by 6% provided that it was the year with the highest return and stability in the region. A high risk-free rate and after 2012 an increased equity
risk premium in Turkey and South Africa absorbed the above the industry average ROE. Risk free rate of GCC countries was relatively low though slowly increasing together with the equity premium. Geopolitical conflicts attributed to the countries in the region, high dependence on the currently unstable export-orientated sectors and financial market vulnerabilities increased the expected shareholders’ return.

A negative spread between ROE and COE in 2008 in the Asian-Pacific region was mostly attributed to banks in Japan, Taiwan and South Korea, while Australian, Indian and Southeast Asian banks’ return was 5% above the COE. It should be noted that the COE of Southeast Asian banks’ may be underestimated due to the limitations of the approach to COE calculation for the countries where the market risk premium was not easily available. As the Southeast Asian equity markets are not as liquid as the mature one, this could lead to a lower standard deviation as, for instance, the US market had, and therefore the lower equity risk premium.

Nevertheless, the estimated equity risk premium for most of the Southeast Asian countries doubled from 2008 to 2017 and the spread between return and cost of equity equalled 0,3% in 2017. Raise in profitability in 2009 and 2010 in the Asian-Pacific region brought the spread back to a positive range. Since 2010 the difference between ROE and COE was gradually narrowing, though the performance of the countries were not homogenous. For example, the median ROE-COE spread of Chinese, Hong Kong (data starting in 2012) and Southeast Asian banks was always positive, Taiwanese banks were creating value for shareholders since 2014, while South Korean banks’ spread was in a negative range during the whole analysed period.

Moderate return of Japanese banks during the period of extremely low interest rates was sufficient to fulfil the expectations of shareholders, with the exception for 2008 and 2017. Increase in the volatility of Australian banks’ stock prices in 2017 resulted in a higher cost of equity and that turned out to be the single year when Australian banks did not manage to generate return sufficient to cover the corresponding COE.

The median ROE-COE spread in the North America region was the least volatile. Canadian banks as most attractive in terms of value creation. The median ROE-COE spread in the North America region was the least volatile. It had its minimum of -2,44% in 2009 on the background of the financial crisis and the maximum of 0,86% in 2015. The Canadian banks were always creating value, often even in the double-digit range. The American banks, having experienced significant drop in the return, were either destroying value or had hardly covered the COE. After 2013 both the risk-free rate and equity risk premium in the US didn’t experience significant deviations, therefore the annual differences in the spread resulted mainly from the change in ROE.

The median ROE-COE spread in the European region was negative or around zero, except for 2008. High ROE in Eastern Europe and low 3-year beta coefficient of the stock price of European banks (due to the inclusion of pre-crisis 2006 and 2007 into the calculation) led to a positive sign of the spread. The gradual decrease in the risk-free rate was
counterbalanced by a rise in the equity premium. The performance of the banks differed significantly from sub region to sub region. Poor performance of South European banks skewed the spread towards the negative area.

To sum up, Canadian banks turned out to be the most attractive in terms of value creation. Southern European banks, on the opposite, generated ROE that was far below the expected shareholders’ return. Comparison of return with the cost of equity showed that if the ROE indicator is considered individually, it does not entirely reflect the performance of a bank. As double-digit ROE of numerous banks, which seemed to be a good performance result on the background of a banking sector average, was not enough to cover the cost of equity. Nevertheless, generally speaking, the ROE-COE spread followed the development of the ROE indicator, and both ROE and COE were to some extent driven by the peculiarities of a certain region.

Comparison of Return on Equity and Cost-Income Ratio Depending on the Size of a Bank

In order to analyse how bank size affects ROE and CIR, the sample of banks was divided into five groups based on total assets at the end of the 2017 fiscal year. Table 1 indicates the distribution of banks across size groups and geographical regions.

<table>
<thead>
<tr>
<th>Bank's asset size group</th>
<th>Region</th>
<th>EU</th>
<th>NA</th>
<th>AP</th>
<th>MEA</th>
<th>LA</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher than $500 bn</td>
<td></td>
<td>19</td>
<td>10</td>
<td>19</td>
<td>0</td>
<td>0</td>
<td>48</td>
</tr>
<tr>
<td>$100-500 bn</td>
<td></td>
<td>17</td>
<td>14</td>
<td>41</td>
<td>8</td>
<td>4</td>
<td>84</td>
</tr>
<tr>
<td>$50-99.9 bn</td>
<td></td>
<td>11</td>
<td>4</td>
<td>39</td>
<td>20</td>
<td>8</td>
<td>82</td>
</tr>
<tr>
<td>$25-49.9 bn</td>
<td></td>
<td>15</td>
<td>19</td>
<td>18</td>
<td>20</td>
<td>4</td>
<td>76</td>
</tr>
<tr>
<td>$12-24.9 bn</td>
<td></td>
<td>9</td>
<td>27</td>
<td>7</td>
<td>10</td>
<td>9</td>
<td>62</td>
</tr>
</tbody>
</table>

Source: Own illustration

As seen in Figure 10, the largest banks, namely those with assets of more than $500 billion, had the lowest average profitability within the analysed period of 10 years. This can be attributed to the fact that they were either more intensive-ly involved in operations with toxic assets than smaller banks or were internationally oriented and therefore immediately experienced the consequences of the global financial turmoil.

Profitability of banks with more than $500 billion in assets was also the most volatile. In addition, they had the highest CIR, which is reflected in Figure 11. There are extreme differences between the median and average CIR of the largest banks. Seven out of 47 banks had a CIR above 100%. An abrupt drop in revenues and discretionary costs resulted in the poor performance of global banks.
Banks between $50 billion and $99 billion in assets enjoyed the highest level of return during the analysed period despite the fact that the measure declined steadily from 2010 onwards and approached the level of other banks. The adaptation of the market to new realities and the narrowing of regional differences in ROE brought the profitability of the banks in the three middle-sized groups to between 10.2% and 11.1%.

The most efficient banks are of medium size with an asset base between $25 billion and $99 billion. Except in 2008,
these banks’ median CIR hovered around 54% and 55% for the duration of the analysed period. The smallest banks in the sample were slightly less efficient. Their CIR was on average 3% worse than one of the medium-sized banks.

One could argue that profitability and efficiency are not dictated solely by the size of the bank as no direct correlation or clear trend were determined. However, bank size is a relative notion in the scope of this analysis. This analysis examines the largest banks worldwide. If the sample was to be increased significantly, banks that are considered small in the scope of this analysis could very well be the largest organisations in a different study. However, the deviation in the performances of the largest banks is clearly observable. There are several explanations for this occurrence.

Firstly, most of the G-SIBs, which are required to have additional Tier 1 Capital according to Basel III, as mentioned before, are in the group of the largest banks. 28 of 30 global systemically important banks are included in the first group of the sample. This negatively contributed to the average ROE of the largest banks, as they are required to have more equity. In addition, as was discussed in the chapter devoted to regional differences, the banks with the worst CIR were often large banks, as they incurred extreme expenses for restructuring procedures and one-time costs.

Secondly, geographical factors influenced the largest banks’ performances. As was previously mentioned, the banks in MEA and Latin American regions had higher levels of ROE. However, according to Table 1, none of the largest banks that were included in the first group are from these two regions.

Klein discusses on the example of the USA several reasons why smaller banks outperformed organisations with more than $500 billion in assets after the financial crisis. Unlike large banks, smaller banks did not expose themselves to high risks, which allowed them to avoid extremely high losses. In addition, smaller banks could develop a regional specialisation and focus exclusively on a traditional lending activity or on a specific customer group. This led to better underwriting and higher margins. Finally, smaller banks were less indebted and had conservative balance sheets because they had created substantial loss reserves.

The smallest banks’ ROE was the most stable and the median return fluctuated the least during the analysed period. On the other hand, as the graph shows, there is a wide spread between the median and average ROE. This spread decreased as the global financial situation stabilised and approached the levels of medium-sized banks. This indicates heterogeneous performance within the group and illustrates that a high number of small banks significantly outperformed their competitors.

---

10 Financial Stability Board (2017). 2017 list of global systemically important banks, p.3
11 Klein, M. (2017). Smaller US banks better at banking than the big ones in Financial Times
A tremendous drop in the largest banks’ ROE resulted in a large ROE-COE gap in 2008. The largest banks’ COE, assessed at the median level, exceeded the corresponding return by 3.4%, while the average spread, skewed by numerous banks with abnormally negative returns, was even higher than 8%. In 2009 the largest banks managed to return to the positive zone of value creation. They achieved their best result of the analysed period when their returns exceeded the shareholders’ minimum expectations by 3%. Afterwards, the spread started to narrow again, and since 2015, with only a minor exception in 2012, it has fluctuated between 0% and 1%. In other words, the largest banks could hardly cover the COE.

For the three groups of middle-sized banks, the ROE-COE spread trend mirrors the development of the ROE. After enduring the 2008 financial crisis, banks experienced three years of increasing value creation, though at relatively low levels. Banks with $25 billion to $49 billion in assets turned out to have the best average ROE-COE spread during the five-year period between 2008 and 2012. However, a significant shrinkage of the spread was observed in 2013, when all banks experienced decelerated value creation. Since 2014, banks of all sizes have diminished capacity for value creation. Only banks with between $100 billion and $500 billion in assets managed to produce returns that are 1% higher than the COE. Two groups of banks, those with between $12 billion and $24.9 billion and between $50 billion and $99.9 billion in assets, were destroying shareholders’ values during the last two years of the analysed period.

The higher profitability of the smallest banks did not result in significantly higher value creation, especially during the years when the global financial situation stabilised. It can be assumed that equity owners consider larger financial institutions less risky. They are more diversified, better capitalised and, as in the case of G-SIBs, would be the first to receive support from the government. Therefore, investors expected less return for less risk, which was reflected in COE levels.
In addition, it is important to consider the specifics of the financial markets and interest rates of each region, both of which influenced the calculation of the COE.

Conclusion

Both ROE and CIR of the banking industry stabilized following the first years after the global financial crisis. However, no continued improvement was observed during the last years of the analysed period. In 2018 ROE and CIR have settled at levels of 10% and 57%, respectively.

An increase in equity was the main factor that hindered the improvement of profitability. In addition, the contraction of the net interest margin and the fluctuation of risk costs had a significant negative influence on the returns of a large number of banks. In order to compensate for the decrease of their net interest income, banks tried to improve non-interest income. However, the change in non-interest income and expenses were counterbalancing each other; therefore, CIR has not undergone considerable changes. Any significant deviations in CIR were usually due to non-recurring costs, such as litigation, restructuring expenses or asset impairments.

Even if a stable ROE of 10% may seem like a promising indication of the banking industry’s sustainable future, a comparison with the cost of equity disproves this assumption. Banks could hardly cover the COE and would therefore create no value for their shareholders. The spread between the ROE and COE narrowed during the analysed period.

Many of the contemporary research findings feature aggregated figures for the banking industry. However, the compilation of banks’ financial performances on the international level refines the final sector’s result. Regional factors such as country’s interest rates, changes in its local regulation, economic and political stability and the degree of its involvement in international financial markets significantly influence ROE and CIR. As a result, in some regions ROE of 20% can be considered an ordinary performance, while in others 10% return is already a remarkable achievement.

Banks’ performances were affected by their size. The largest banks were the least efficient and had the lowest average 10-year period return. On the other hand, ROE and CIR of smaller banks were less volatile.
List of references


