Rules of remuneration of material risk takers and their implementation in the European Banks

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According to the new rules to be applied in the European Union, data on compensation of material risk takers are to be disclosed from year 2014. This paper overviews the different expectations regarding remuneration of bank managers highlighting the requirements of European Parliament and Council. Furthermore, it analyses data of 18 European banks disclosed based on the new lawful requirements. Based on empirical study it proves there is correlation between number of material risk takers and value of total assets.

Journal of Economic Literature (JEL): G20, G21, G28, J33

Keywords: remuneration, compensation, bank

1. Introduction

Processes, practices, activities causing global financial crisis started in 2007 are various, but there is general agreement in the financial industry, the public sector, and academia that incentive structures of the top management of the significant financial institutions did not play risk mitigation role. It is underpinned by numerous researchers. For example *Behr et al.* analysed such bonus system concerning remuneration of risk takers where the compensation structure rewards loan volume and penalizes poor performance. They argue when performance of the portfolio managed by them deteriorates, the risk takers approve a higher fraction of loan applications. In that case loan officers neglect activities that are not directly rewarded under the contract, but are in the interest of the bank. While the reaction given by loan officers constitutes a rational response to a time allocation problem, it is not in line with the bank interest. The neglected other activities are various: performing process built-in control, proper and traceable documentation of the deals, record keeping, activities concerning collaterals etc. Though, these activities are not honoured by the remuneration system, they are important in the crediting process and could cause difficulties in the future.
Certain bank leaders motivated by promise of fabulous variable remuneration have taken excessive risks that afterwards caused significant loss during the crisis. This process was unfavourable for both the shareholders and financial system of sovereigns (and finally for the taxpayers). The needs to reform the implemented practice was strengthened by the pressure of the public when 9 banks in U.S. paid bonuses for year 2008 after receiving bail-out fund or when it was disclosed that the French investment bank Natixis, which made significant trading loss in the former year and got state support, was going to pay bonuses in amount of EUR 70 million to 3,000 employees.

2. Rules regulating the remuneration of the material risk takers of European Banks

2.1 Principles of Financial Stability Forum

In order to promote stability of the international financial system, G7 Ministers and Governors endorsed the creation of the Financial Stability Forum (hereinafter FSF) in 1999. After a decade, motivated by the above introduced processes, the FSF issued its Principles for Sound Compensational Practice. When implementing the Principles, banks have to establish effective governance of compensation system that continuously monitors and revises the applied compensation structure. The next step is alignment of the compensation practice with prudent risk takings. In other words, level of remuneration of bank managers should depend on level of risks taken by them. According to the Principles of FSF, the implemented remuneration system must be monitored by the responsible supervisory organization and the oversight of the remuneration system must be rigorous. Furthermore, banks must disclose their compensation practice.

2.2 Implementation Standard of Financial Stability Board

The successor of the Financial Stability Forum, the Financial Stability Board (hereinafter FSB) issued the Implementation Standards of the FSF Principles. Based on the Standards, banks bearing significant system risk have to establish remuneration committees as integral part of the governance system. The remuneration committee of a bank should be able to independently evaluate the implemented compensation system. The committee should ensure that the remuneration system of the bank is in compliance with the FSF Principles and with the related Standard of Basel Committee on Banking Supervision (hereinafter Basel Committee). Ayadi and Boujelbene examined the connection between the implemented remuneration systems and the insolvency risk of the banks. They applied panel data analysis using remuneration data of thirty European banks over the period of 2004-2009 and found negative correlation between the frequency of meeting of the remuneration committees and the risk of insolvency of the banks: when the frequency of the meetings grew, the risk of insolvency decreased in case of banks analysed. The result of this panel data analysis underpins that creation of remuneration bodies as integral part of the banking government system has significant effect on the banking risks.
In line with the Principles of FSB, the function of the remuneration committees could be fulfilled by other organizational units: the main elements of the remuneration system must be defined, monitored and revised by the remuneration committee or its equivalent.
In case of material risk takers (hereinafter MRTs) having significant effect on the risk exposure of the bank, the following principles must be fulfilled:

- Certain part of the remuneration must be variable and must be dependent variable of risks taken by the bank. There is no predefined ration;
- 40-60 percent of the variable compensation is subject to deferral period. The length of the period is not determined but cannot be less than 3 years. Nevertheless, the study of Leisen shows that such common opinion that deferring the bonus payments to the future makes the bank leaders less willing to take risks is false;
- The deferral part should depend on the level of seniority. The lower level of seniority, the lower level of deferred part;
- More than 50 percent of the variable remuneration must be paid in shares, in share equivalent or other non-cash instruments. However, the deferred part of share based compensation is not defined;
- If the financial performance of the bank ruins during the deferral period, the unvested part of the remuneration must be retained;
- If a sovereign must intervene so as to stabilize or bail-out the bank, the supervisory authority should have right to restructure the compensation system. Nevertheless, by implementing the Directive on Resolution Mechanism such situation may not occur, since the standard prohibits the direct intervention of sovereigns;
- Guaranteed bonus is not acceptable.

The Implementation Standard requires to disclose the decision making process defined in the remuneration policy, the composition of the remuneration committee (or equivalent), the main elements of the remuneration system highlighting the criteria applied in the performance evaluation, the connection between the remuneration and performance, the deferral rules, vesting and malus as well as claw-back criteria, the applied payment types as well as the aggregated awarded compensation.

2.3 Compensation Principles and Standards Assessment Methodology of Basel Committee on Banking Supervision

The Compensation Principles and Standards aims to give guideline to supervisors when examining banks' compensation system and supports assessment of the banks' compliance with the abovementioned FSF and FSB Principles and Standards. This methodology fosters supervisory approaches in promoting the evolvement of prudent compensation practices at banks.
When the supervisors evaluate the remuneration system of a bank, the following aspects must be taken into account:
1. The control over the design of remuneration system must be actively overseen by the top management. The managerial monitoring and review of the compensation system is expected so as to ensure the system operates as intended. Compensation outcomes, the related risk evaluations as well as risk outcomes should be regularly monitored. Furthermore, the remuneration system should include control mechanism;
2. The remuneration of employees in risk control area should be independent of the performance of the professional areas they monitor. This independency must be ensured. Moreover, compensation of employees in risk area should be commensurate with their key roles;
3. When determining the remuneration of the employees all types of risk should be taken into account. Therefore, both quantitative and qualitative measures should play a role in evaluation of supervisors.
4. Also, the result of the bank should be taken into account during the calculation of remuneration of banking managers. Furthermore, the remuneration of the employees should depend on the risk outcome of the bank;
6. The risks taken must determine the compensation of the employees. In order to ensure the fulfilment of this principle, certain part of the remuneration should be deferred;
7. The bank should employ different compensation forms, such as cash, shares and shares equivalents.
8. The Basel Committee expects that supervisory review of the compensation system should be rigorous;
9. Also, information on remuneration system and practice must be disclosed.

2.4 Remuneration data of material risk takers to be disclosed based on Pillar 3 requirement

The goal of these additional Pillar 3 requirements for remuneration is to support an effective market, to make possible for users the assessment of the banks' compensation practices based on information disclosed. Also, the application of these requirements contributes to promote the convergence and consistency of disclosure on remuneration. Practically, the Basel Committee requires that banks bearing significant system risk disclose information on their remuneration design and practice in line with FSF Principals and FSB Implementation Standards. Data must be related to such employees that have significant effect on risk taking, in other word to material risk takers. The rules had to be fulfilled from 2012. The following data are to be disclosed:

- The composition and mandate of the main body responsible for overview the remuneration, as well as the external consultants whose advice has been taken into account;
- The scope of the remuneration (e.g. type of material risk takers, regions, business lines etc.);
- Information related to the design and structure of compensation system including the main elements and purposes of the remuneration policy;
- Methods applied by which risks identified in the remuneration system;
- Information relating to methods by which the bank makes connection between level of performance and level of remuneration;
- Methods by which the bank adjusts remuneration based on longer-term performance;
- Different forms of variable remuneration (e.g. cash based, share based remuneration);
- Number of meetings held by remuneration committee and the compensation provided for the committee members;
- Number of employees who received compensation during the financial year (number of material risk takers);

- Amount of the compensation awarded during the financial year;
- Data on deferred remuneration.

2.5 Recommendations of European Commission

In 2009, the European Commission issued its own expectations concerning principles to be used when implementing the remuneration systems at financial institutions. According to the Recommendations:

- Financial institutions should compile remuneration policies. The policy should be in compliance with the strategy, goals and risk management of the institution, that is, the compensation system should serve the long term interest of the bank. The remuneration policy should be revised annually;
- Taking the long term interest of the bank into account, the remuneration system could not incite to excessive risk taking;
- The compensation system should make balance between the fixed and variable compensation but the variable part should be limited;
- In order to incite managers for long term sound banking activity, the variable part of their compensation should depend on long term performance of the bank. Also, the variable part of the compensation should be retained and should be subject to deferral pay period;
- The variable compensation should be paid in shares, options, cash or other financial instruments;
- The institutions are expected to create remuneration committees. As it is defined in the FSB's Principles, the members of remuneration committee should have proper profession knowledge and experience;
- The supervisory board as well as the management board should approve the compensation mechanism that determines the remuneration of senior managers. In the same time, the remuneration system should define proactive rules so as to avoid conflict of interest;
- The essence of the remuneration system should be disclosed. In the frame of the disclosure criteria used in performance assessment, types of remuneration and vesting conditions should be specified.

2.6 Capital Requirement Regulation and the related Directive (CRR/CRDIV)

The European Parliament and Council issued their regulation on prudential requirements of banks and directive on access to the activity of credit institutions and the prudential supervision of banks. The fulfilment of the expectations of the regulation is compulsory for each European bank and the rules defined by the directive cannot be significantly modified by the member states. In other approach, while the FSF Principles, the FSB Standards, Principles and Standards of Basel Committee as well as Recommendations of European Commission are not generally mandatory for each bank, keeping the articles of the new regulation and directive is compulsory for the banks funded and operating in territory of the European Union.
The regulation expects that the following information should be disclosed:

- Decision making process via which the remuneration of the material risks takers is determined;
- Number of sessions of remuneration committee held in the previous year;
- Constitution of the remuneration committee and its mandate;
- Connection between the long term profit of the bank and the long term remuneration of the material risk takers;
- Key points of the elaborated compensation system;
- Method of performance measurement;
- Retrospective corrective actions linked to the risks arisen that give opportunity to the bank to use malus or claw-back system;
- Applied rules concerning deferred compensation;
- Ratio (comparing with the amount of the total remuneration) and amount of the paid fixed remuneration in the given financial year;

- Ratio (comparing with the amount of the total remuneration) and amount of the awarded variable remuneration in the given financial year;
- Criteria of awarding shares, options or other financial instruments;
- Amount of the total remuneration split into activity segments;
- Amount of the total remuneration split into cash, shares, share based pay and other financial assets;
- Amount of the total variable remuneration split into shares, shares based pay and other financial assets;
- Amount of the deferred remuneration;
- Amount of the total remuneration split into management and remaining material risk takers;
- Paid deferred remuneration awarded in the previous years.

The Directive deals with the remuneration in more detailed form. According to the Directive the remuneration could be split into two main parts.
The first part of the compensation is the fixed based salary. It mirrors the professional experience of the employees in question as well as the functions fulfilled by them.
The second part of the compensation is based on performance and is variable. Generally, the variable part could not be higher than the fixed part. In other words, the variable compensation could not be higher than 100 % of the fixed part. However, the general meeting of the bank or owners of the bank have right to define higher ration. Even if higher ration has been approved, its measure must be lower than 200% of the fixed part. However, in Murphy's opinion, the reaction of the banks will be contra-productive. Applying this rule, banks will raise the fixed part of the remuneration of material risk takers and their variable remuneration will remain relatively on lower lever. Consequently, these measures will reduce the competitiveness of the European banks.

When terminating a contract, the related award should be in line with the related risk levels.
According to the Directive, at least 40% of the variable remuneration is to be paid at least in 3-5 years deferred period. Furthermore, the deferred part could be vested if the financial situation of the credit institution allows it and if it is reasonable based on the performance of the institution, the organizational unit and the employee.

3. Data, methodology

This section deals with data of actual remuneration of MRTs of top 18 European banks[1] used in the calculation as well as the applied methodology. During the analysis the following was examined:

1. The ratio of the material risk takers comparing with the total number of employees;
2. The relation between the number of material risk takers and the balance sheet total of the selected 18 banks;
3. The relation between the number of material risk takers and the net income of the selected 18 banks;
4. The average remuneration of the material risk takers;
5. The ratio of the fixed and variable parts, non-deferred and deferred parts, cash- and share-based parts of the variable remuneration.

Excluding the Swiss banks, the aggregated balance sheet total of the banks in the sample is amounted to 17,694,030 million EUR as of 31/12/2013 which is 44.93% of the aggregated balance sheet total of the bank sector in the European Union.
As for net interest income, the aggregated net interest income of the listed 16 banks (excluding two Swiss banks) is 47.57% of the aggregated net interest income of each bank in the EU. At the time of

[1] The selected banks were the followings: HSBC Holdings, BNP Paribas, Barclays, Deutsche Bank, Crédit Agricole, Royal Bank of Scotland, Société Générale, Santander Group, Groupe BPCE, Lloyds Banking Group, ING, UBS, Credit Suisse, Rabobank, BBVA, Standard Chartered, Commerzbank, AIB. As it is observable two of the banks above were funded in Switzerland, others must keep the rules of CRR/CRDIV.

compiling the article, data for year 2014 has already been disclosed by the selected banks but the aggregated balance sheet data of each European bank provided in Statistical Data Warehouse of the European Central Bank were not available for year 2014. It is the reason for indicating comparative data of year end 2013. However, significant changes in the abovementioned ratios did not occur in time period 2011-2013. The ratio of the total assets of the analysed 16 banks (excluding two Swiss banks) was 45.15% and 44.83% comparing with the total assets of each bank in the European Union in 2012 and 2011. Also, there was not significant change in portion of the net interest income of the selected 16 banks (48.69% in 2012 and 49.56% in 2011).
Therefore, it could be stated that the selected banks cover close to half of the whole European bank sector. Though, the number of observation used in calculation is low, these banks represents close to half of the whole European banking system in terms of total assets and net interest income.
Each analysed bank specified the amount of the total remuneration of the year in their annual or Pillar 3 reports but the deferred and non-deferred parts as well as the cash based or share based vesting parts were not given by each bank. The lack of certain data to be disclosed by the banks made the detailed analysis difficult. If certain data of a bank were not available for the analysis this bank was excluded from the calculation.
The following models and calculation was applied in the analysis:

1. The ratio of the material risk takers comparing with the total number of employees

Simple average calculation was applied in order to compare the number of material risk takers with the number of staff employed by the 18 selected banks.

2. The relation between the number of material risk takers and the balance sheet total of the selected 18 banks

When the connection between the number of MRTs and the balance sheet total of the banks was examined, simple linear regression analysis was used where the number of material risk takers was the dependent and the balance sheet total (total assets) of the examined banks was the predictor variable. Any of y_i can be expressed by the following formula:

$$y_i = \beta_0 + \beta_1 x_i + e_i \tag{1}$$

where

y_i is the i-th dependent variable (number of risk takers),
x_i is the i-th predictor variable (total assets),
β_0 is constant (the intercept of the line at y axis),
β_1 is the slope of the line (the coefficient of the predictor variable),
e_i is the residual value, in other words the difference between the value predicted by the model and the actual value at i-th observation.

Naturally, there are infinite pairs of β_0 and β_1 but we can find such pair of β_0 and β_1 where sum of square of e_i-s is the lowest:

$$SSE = \min\left(\sum_{i=1}^{n} e_i^2\right) \tag{2}$$

where SSE is the lowest sum of squares of e_i-s.
Since e_i is sometimes lower and is sometimes higher than the predicted value, their effect may reverse. That is the reason for using squares. In case of pairs of β_0 and β_1 where the sum of squares is the lowest, the following formula describes the most matching line:

$$\hat{y}_i = \beta_0 + \beta_1 x_i \tag{3}$$

In that case,

$$\beta_1 = \frac{\sum_{i=1}^{n}(x_i-\bar{x})(x_i-\bar{y})}{\sum_{i=n}^{n}(x_i-\bar{x})^2} \tag{4}$$

and

$$\beta_0 = \bar{y} - \beta_1 \bar{x} \tag{5}$$

where

$\bar{x}$ is the mean of the predictor values and
$\bar{y}$ is the mean of the dependent variables.

The above described process is the so called ordinary least squares method.
When determining the most matching line, the tightness of the correlation was also examined by calculating the linear correlation coefficient:

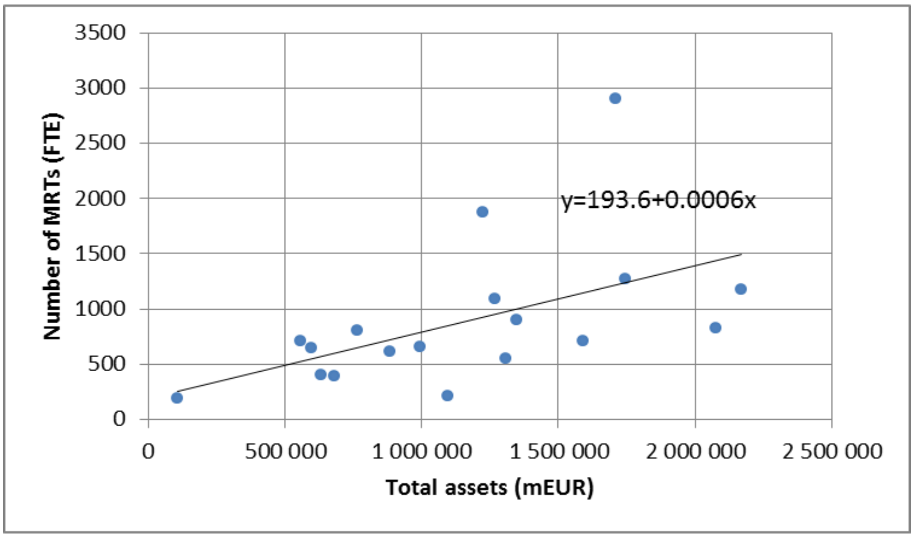
$$r = \frac{\sum_{i=1}^{n}(x_i - \bar{x})(x_i - \bar{y})}{\sqrt{\sum_{i=1}^{n}(x_i - \bar{x})^2 \cdot \sum_{i=1}^{n}(y_i - \bar{y})^2}} \quad (6)$$

3. The relation between the number of material risk takers and the net income of the selected 18 banks
The above listed methodology was also applied when examining the relation between the number of MRTs and the net income of the banks.
4. The average remuneration of the material risk takers
Also, the average remuneration of material risk takers was determined in two kinds of approaches. On the one hand banks have to disclose the summarized data of remuneration as per salary bands. In the calculation the band average was weighted by the number of material risk takers belonging to the respective band. On the other hand banks have disclosed the total amount of the remuneration provided to the MRTs and these data were used in the simple arithmetical average calculation.
5. Ratio of the fixed and variable parts, non-deferred and deferred parts, cash- and share-based parts of the variable remuneration
In this case simple percentage calculation was used in the calculation.

4. Results, discussion

1. The ratio of the material risk takers comparing with the total number of employees
The selected 18 banks employed 1,871 thousand employees (full time equivalent) out of which there were 15,955 material risk takers at the end of 2014. It means that 0.85% of the employees were identified as material risk taker.
2. The relation between the number of material risk takers and the balance sheet total of the selected 18 banks
The number of MRTs might depend on numerous factors: the structure of the banking group, the geographical extent, the implemented risk management system, the extent of the bank. Analysing how the number of MRTs depends on the balance sheet total of the banks, the following chart shows the connection between the extent of the banks and the number of material risk takers expressed in full time equivalent (FTE) indicator.

Chart 1 Connection between total assets and number of MRTs



Source: IFRS and Pillar 3 reports of the analysed banks, own calculation

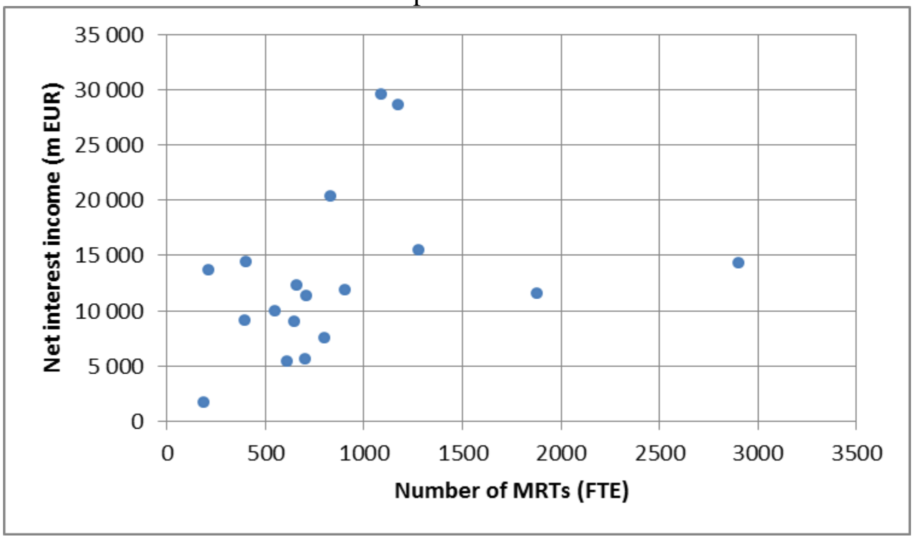
As it is well observable, the numbers of MTRs are around a line (except for two extreme cases). This line expresses that in case the balance sheet total (total assets) increases by 1 000 million EUR the number of the material risk takers increases by 0.6 headcount. However, the connection is not too strong (the value of correlation coefficient is 0.52). Anyway, it can be concluded that the growth in the total assets generates growth in number of material risk takers. Nevertheless, it can be proven that there is much stronger correlation between the number of employees and the total assets.

3. The relation between the number of material risk takers and the net income of the selected 18 banks

Since the long term success of the MRTs' activity might be expressed by the net interest income of the bank, we should compare the number of material risk takers and the profit originating from net interest income of the banks. In the approach above, when the number of MRTs and total asset of the bank were compared, it was supposed that the extent of the bank determines the number of risk takers, which is natural. However, if we want to compare the numbers of MRTs with the net interest income of the banks there is no unambiguous determination. On the one hand the number of risk takers has effect on the interest income. On the other hand the extent of the net interest income depends on the measure of the total assets of a bank. Therefore, the net interest income may have indirect effect on number of MRTs.

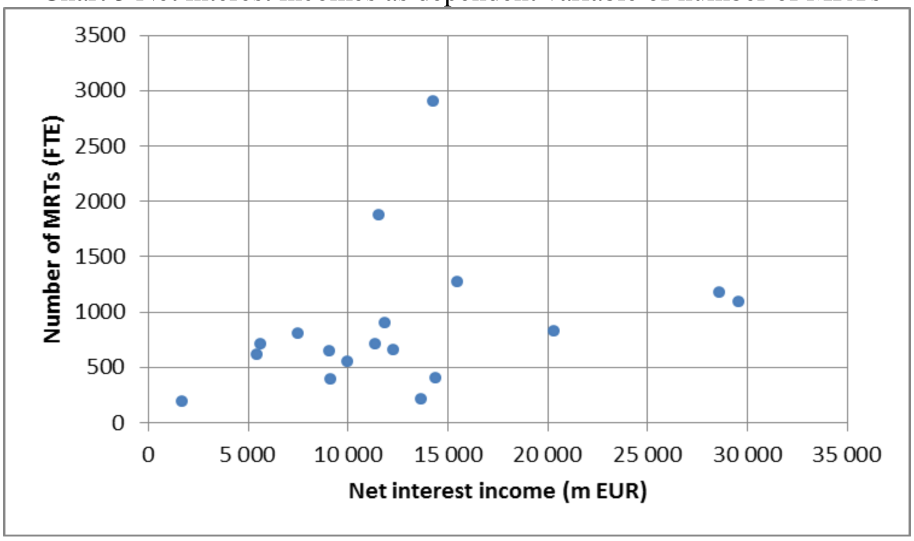
The following two charts show both cases.

Chart 2 Number of MRTs as dependent variable of the net interest incomes



Source: IFRS and Pillar 3 reports of the analysed banks, own calculation

Chart 3 Net interest incomes as dependent variable of number of MRTs



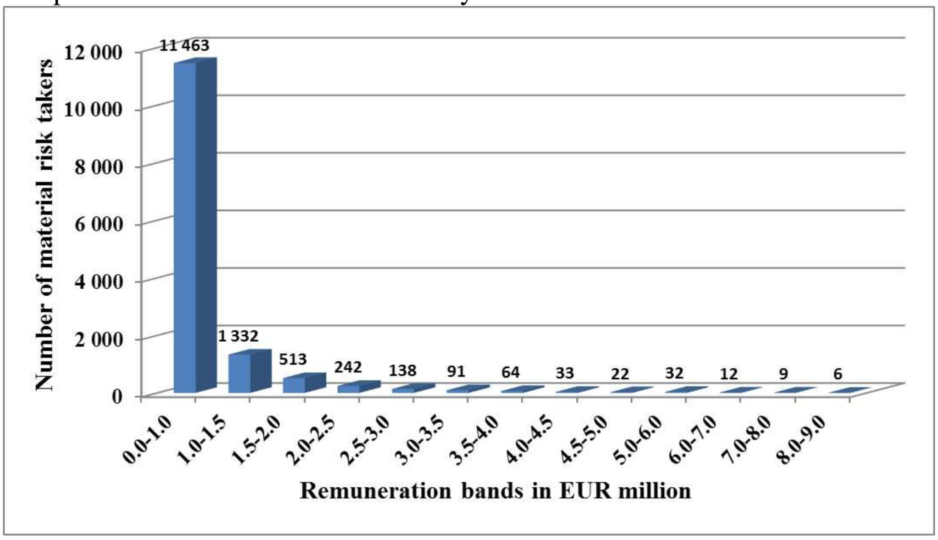
Source: IFRS and Pillar 3 reports of the analysed banks, own calculation

There is weak correlation between the numbers of material risk takers and net interest income of the analysed banks (the correlation coefficient is 0.31).

4. The average remuneration of the material risk takers

As for distribution of the remuneration, significant part (82.13%) of the material risk takers has been awarded less than 1 million EUR. Further 9.54% of the MRTs has been awarded less than 1.5 million EUR. The following table shows the distribution of the awarded remuneration. In case of 4 banks and 1998 material risk takers there is no disclosed information on distribution of remuneration. Therefore, the data in the following table cover 14 banks and 13957 MRTs. The Chart 5 depicts the summarized number of material risk takers as per belonging bands as of 31/12/2014.

Chart 4 Distribution of the remuneration of material risk takers as per remuneration bands in the analysed banks



Source: IFRS and Pillar 3 reports of the analysed banks, own calculation

If we weight the medium of the bands with the related number of employees, we get the average remuneration of the MRTs. The calculation is the following:

$$\left(0+\frac{999999-0}{2}\right)\cdot\frac{11463}{13957}+\left(1000000+\frac{1499999-1000000}{2}\right)\cdot\frac{1332}{13957}+\cdots$$

$$\ldots+\left(8000000+\frac{8999999-8000000}{2}\right)\cdot\frac{6}{13957}=743085 \quad (7)$$

The average remuneration of the MRTs is 743,085 EUR in 2014.

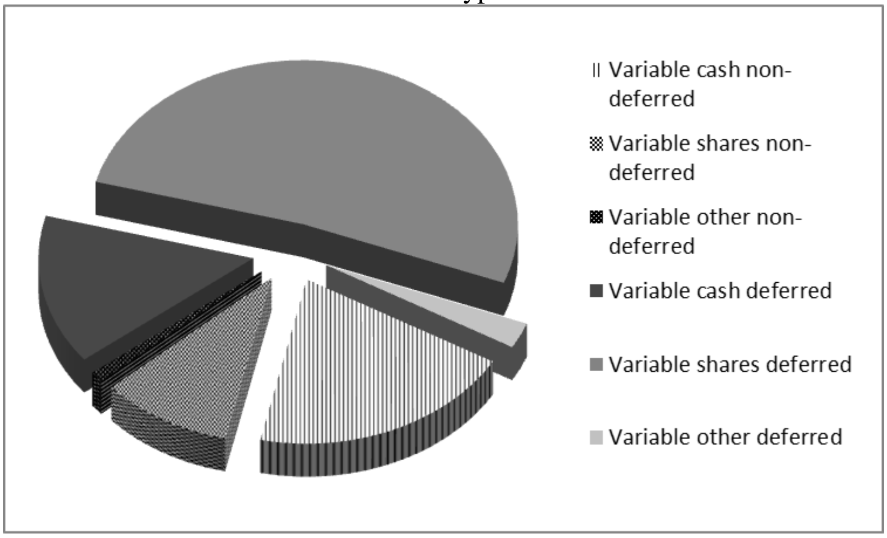
Unfortunately, the calculation above is not too accurate in (7) because it used the average of the minimum and maximum values of the bands. In order to make more precise analysis we could use detailed data on remuneration disclosed by the banks. Taking the disclosed detailed remuneration data into account the average remuneration of the selected 18 banks and 15955 material risk takers was 781,757 EUR in 2014. This average is close to the average determined above in case of 14 banks.

5. Ratio of the fixed and variable parts, non-deferred and deferred parts, cash- and share-based parts of the variable remuneration

The quotient of variable and fixed part can also be determined based on the disclosed data. This quotient is 1.12. It means that the variable part of the remuneration is higher than the fixed part. As it was mentioned above, the variable component shall not exceed 100 % of the fixed component of the total remuneration but member states of European Union may allow owners of the banks to approve higher level of the ratio between the fixed and variable components of remuneration. Even if it is

allowed, the overall level of the variable component shall not exceed 200 % of the fixed component of the total remuneration. In 6 cases of 18 the variable part of the remuneration was higher than the fixed part and in 2 cases this ratio was higher than 200%. However, these banks do not have to keep the rules of CRR/CRDIV these banks were founded in Switzerland.
As for retained component of the variable remuneration, 14 banks of 18 disclosed data on deferred and non-deferred remuneration. In case of these banks, 69.12% of the variable remuneration was deferred.
As for vesting type of variable remuneration, 13 banks provided these types. Based on the data disclosed by them, 64.78% of the non-deferred remuneration and 21.41% of the deferred remuneration was paid in cash.
The following chart shows the distribution of remuneration as per components. Data include 13 such banks that specified detailed data.

Chart 5 Distribution of the different types of the remuneration



Source: IFRS and Pillar 3 reports of the analysed banks, own calculation

6. Conclusion

Crisis started in 2007 attracted attention for banking managerial remuneration. In 2009, the Financial Stability Forum was the first organization that issued principles so as to give guidance to internally regulate the managerial compensation system of the banks. After that, numerous expectations, standards, recommendations have been given by different international organizations but the capital requirement regulation and the related directive of the European Parliament and Council are the most important for European banks.
The article analysed the actual remuneration data of year 2014 disclosed by 18 European top banks and found correlation between number of material risk takers and value of total assets of the banks. However, strong connection between banking performance and the level of managerial remuneration was not found.

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