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Sustainable Value Creation in Commercial Banks during Financial Crisis

Jelena Stankeviciene^{a*}, Marta Nikonorova^a

^a*Vilnius Gediminas Technical University, Faculty of Business Management, Saulėtekio ave. 11, LT-10223 Vilnius, Lithuania*

Abstract

Sustainable value leads to the financial institution's positive economic performance during financial crisis. More and more banks in European Union are implementing sustainable development strategy, in order to avoid economic downturn in crisis time. The main goal of this paper is to propose a model of sustainable value measurement in commercial banks during financial crisis. To reach this goal the sustainable value approach and the importance of corporate social responsibility in the commercial banking and the role of shareholder value in sustainable value were analysed. Moreover, the model of measurement of shareholder value is analysed and created the joint model of sustainable value measurement. Based on these methods and models, the share-holder value of the banks is established, the sustainable value of the bank was evaluated and compared. Relationship of sustainable value and shareholder value was established. The results show that sustainable value creation helps bank industry to maintain positive economic performance even in crisis time.

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1. Introduction

The prevention of the collapse of banking industry during the financial downturn is crucial to the on-going viability of any banking organization. Therefore, keeping sustainable economic performance and quick recovery is among the most important activities conducted by banks. The main goal of this paper is to propose a model to evaluate sustainable value of commercial banks and main impacts on value during the financial crisis. Today economic situation dictates the need to reach the sustainable value by the companies and implement a model according to which a sustainable value could be evaluated. Different frameworks and models are proposed by the

*Corresponding author. Tel.: +370-52-745018.

E-mail addresses: jelena.stankeviciene@vgtu.lt

economists (Dermine, 2009; Gross, 2006; Harts & Milstein, 2003; Pitman, 2003; Shukla, 2009), and still there is not one main and basic model, according to which a sustainable value could be obtained.

One option how to determine sustainable value was offered by Figge & Hahn (2004, 2005). The main idea of the model is to consider the economic, social and environmental resources that must be measurable and quantifiable in meaningful way. It must be defined indicators that would measure the resource use. In order to know the efficiency of the resources, there is a need to establish how much return a company creates per resource unit. In addition to this, it could be said that in this case, a sustainable value could be identified by the difference between return and opportunity cost through the Return to Cost Ratio. Social responsibility was deeply examined by Porter & Reinhardt, (2007), Porter & Kramer (2011) and Laugel & Laszlo (2009) offer three dimensions of social responsibility measurement model that could be a part of measurement of sustainable value. Furthermore, according to Laugel (2009) by the social responsibility companies could find viable solutions to way out of the particular or specific problems caused by financial crisis and ensure the sustainability in time.

The social wealth in sustainable value creation determines Ingenbleek *et al.* (2007) identifying sustainability indexes and integration of “green” banking and finds out the problems of lack of social responsibility in banking sector, while finance management is the driven force, but the social side is not less important than financial in the banking. Social responsibility is beneficial as for business, as for society. Titko & Lace (2011) developed the option, that an integral goal of financial institution should be value creation for shareholders, reaching the competitive advantage. Focusing on shareholder value could be the best way to the how to achieve sustainable prosperity.

What concerns the value creation in banking, Fiordelisi & Molyneux (2007) examined the determinants of shareholder value creation for a large sample of European banks, determined various factors that influence the performance of banks. Also, Visali, Roxburgh, Daruvala, Dietz, Lund, & Marrs (2011) offer to use the method of Return on Equity ratio to measure shareholder value. Those factors should be taken into consideration in determining sustainable value in banking. Sustainable growth in banking is important during unstable economics. The downturn made a negative impact on European banking. Pilkova (2010) determined key factors made to the commercial banking during the financial crisis that could be used in recovery of bank sector. According to Dalbol & Dalbol (2011) it is proposed four theories of sustainability according to which sustainable value creation should take the dominant place in the strategic asset of any company. The framework of establishment the sustainable value includes cost savings and margin improvement and revenue growth in sustainability by enter new “green” markets and increasing the market share.

2. Sustainability Approach

The mean of sustainability is multifaceted, as it is described differently in many academic contexts. But the main idea of all the sustainability definitions is, that there is an interaction of three main systems, such as: environmental, social and economic. The idea of sustainability gives new thinking to the banking sector, which recognizes the interdependencies of the economic, social, and environmental systems, and the connections between social and environmental challenges, on the one hand, and bank’s level growth and innovation, on the other (Hutton & Cox, 2005) This appears in bank’s strategies designed to create value for the future. The best way to achieve the sustainable value grow is to create such strategy, according to which bank could meet the intersection of economic, social and economic sectors.

Basically, to reach the sustainable value growth, the bank must implement strategic plan and according to it control an operating process. According to the World Commission of Environment and Development published report named Brundtland report, was obtained the definition of “sustainable development” that clears changes in politics and strategy needed to achieve it. “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” (WCED, 1987).

The definition of sustainable development has contributed in creating great awareness on environment conditions, shows that sustainability links human need and consumption trough the period of time. On the other side it has been criticised for being too abstract with the lack of practical sights and economic growth. As a result a wide range of the concept of sustainable development is listened today (Lo & Sheu, 2007; Young & O’Byrne, 2001). One of new variation of definition of sustainable development by the International Institute for Sustainable Development supports this strategic orientation:

Sustainable development is the adoption of strategies and activities that meet the needs of the enterprise and its stakeholders today while protecting, sustaining, and enhancing the human and natural resources that will be needed in the future (International Institute for Sustainable Development, 1992).

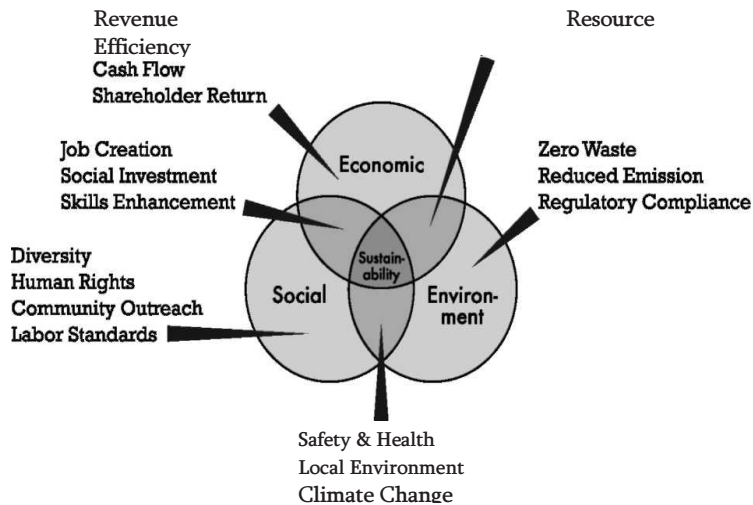


Fig. 1. The conceptual Model of Sustainability (Source: B. Hutton, D. Cox, 2005)

The conceptual model, shown in Fig. 1, provides the essence how bank could embrace its sustainable development with the overall strategy. The diagram shows the interactions of the economic, social, and environmental systems and gives examples of measurable business variables that reflect the natural interdependencies between the systems. The main idea, that the banking sector should recognize is that strategic environmental and social actions can enhance profitability through environmental stewardship and through promoting social equity in ways that serve both shareholders and the larger public good. When that occurs, the value of a bank is increased through enhanced reputation, performance, and its valuable name among key stakeholders.

There are many ways, which banking sector can use in order to achieve sustainable value growth. The most efficient strategy is created according the size, market position, operating of a particular bank. The sustainable strategies applied by a bank will change over time and circumstance, and across the spectrum of its operations and stakeholders, the objective of which is to align bank practices with stakeholder value while balancing short and long-term considerations. When this alignment is achieved, shareholder value is created, leading to a virtuous circle in which banks will be incentivized to invest more in sustainable activities to the benefit of both shareholders and other stakeholders (Hutton & Cox, 2005).

Identifying a bank's opportunities for sustainable practices is not especially difficult (Moessner & Allen, 2011; Hays & Ward 2010). The main option is to choose among the limitless options given the inescapable limitations on a bank's budget, time, expertise, and the often conflicting values and motives of its stakeholders. Perhaps the best way for leaders to make such choices is to weigh the value creation potential of various options within the context of their strategic plan. According to Gilding, Hogarth, & Don Reed (2002), and his report single Bottom Line Sustainability, identifies four primary drivers of value creation:

1. *Margin improvement.* This can be achieved through actions that increase operational effectiveness, such as eco-efficiency measures and creating premium pricing opportunities through enhanced customer loyalty, product differentiation, and gaining access to new market segments.
2. *Risk reduction.* Sustainability actions can reduce both financial risk and protect corporate and brand reputations through actions that create positive stakeholder relationships, generate community support, and increase

employee loyalty; thereby reducing the risk of delay in new product introductions and negative shareholder resolutions.

3. *Growth enhancement.* This may be accomplished through product and process innovation, and also by developing capacity in new markets, motivating employees, and increasing sales of existing products.
4. *Capital efficiency.* Return on investment can be improved by reducing working capital requirements, replacing products with service, or materials with knowledge.

3. Data and methodology

To get the model to determine sustainable value of the financial institution is supposed to combine the shareholder value approach based on the increasing revenues and the reduced cost of the resources bank would have through the implementing the corporate social responsibility model, offering to obtain shareholder value by the EVA (economic value added) ratio, that is represented by bank's net operating profits subtracted its capital charge over the same period (Keffas & Olulu-Briggs, 2011; Salzmann, Ionescu-Somers, & Steger, 2005; Simpson & Kohers 2002). Another way to determine shareholder value is described in the McKinsey model (Visali, Roxburgh, Daruvala, Dietz, Lund, & Marrs, 2011) offering the main performance indicator Return on Equity. By the gathering results obtained, using suggested by Fiordelisi & Molyneux EVA model (Fiordelisi & Molyneux, 2010) and ROE shareholder value measurement indicator offered by Visali, Roxburgh, Daruvala, Dietz, Lund, & Marrs (2011), are compared.

Sustainable value could be obtained implementing Figge & Hahn (2004, 2005). represented model, that includes the return on environmental and social resources which must cover the costs of these resources. The cost of a company's capital is used to determine how much value a company has created after deduction of its cost of sustainability capital. The value that exceeds a company's sustainability capital is sustainable value. The next step is to find if there is a positive connection between the shareholder value and sustainable value of the Bank. The connection is determined using the correlation analysis between Sustainable Value, EVA, WACC and ROE key indicators. In order to find the sustainability's positive impact on financial institution during the recession time, there are all commercial banks in the region analysed by the Economic Value Added and combine with the sustainable bank performance.

According to theory provided by Fiordelisi & Molyneux, (Fiordelisi & Molyneux, 2010) a lot of factors that has an impact on shareholder value in European banks are analysed. According to this, it is possible to draw a chart of value drivers that impact the shareholder value.

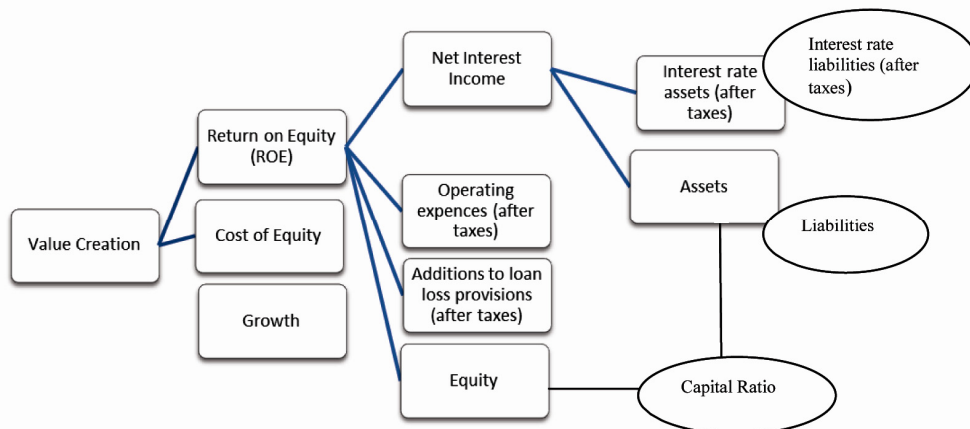


Fig. 2. Fiordelisi & Molyneux model of shareholder value measurement (Fiordelisi & Molyneux, 2010)

It is clear from the model, that the cost-income ratio is an important driver and calculated as operating expenses divided by net interest income. Further, subtracting taxes, operating expenses and loan loss provisions from the net

interest income makes it possible to derive the net income and thereby calculate return on equity, which is, as described in the residual income model, a key driver in bank valuation models (Koller, Goedhart, & Wessels, 2010). As it is shown in the Fig. 2 cost-to-income ratio includes operating costs of business relative to net interest income. Capital ratio indicating the relative proportion of equity used to finance a company's assets shows equity requirements for the assets outstanding. Cost of equity is based on asset liability mix, while growth indicates growth of assets and liabilities. Loan losses in this case are expected future losses on loans outstanding.

The shareholder value creation measure used by Fiordelisi & Molyneux (2010) is the economic value added (EVA) which is defined as a bank's net operating profits subtracted its capital charge over the same period. In order to affect the EVA banks have three bottoms to push: Net operating profit, opportunity cost of capital and invested capital.

According to Visali, Roxburgh, Daruvala, Dietz, Lund, & Marrs (2011) general view on shareholder value creation, the core driver in banks is the economic profit, where ROE and cost of equity are the main drivers in determining shareholder value.

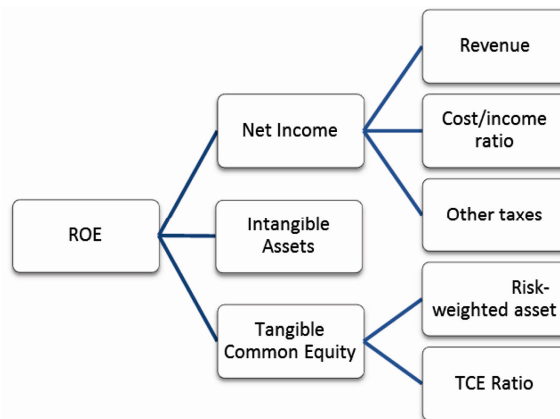


Fig. 3. McKinsey model of shareholder value measurement (Visali, Roxburgh, Daruvala, Dietz, Lund, & Marrs, 2011)

Revenue growth is the most common value driver by Visali, Roxburgh, Daruvala, Dietz, Lund, & Marrs (2011). What is more Visali, Roxburgh, Daruvala, Dietz, Lund, & Marrs (2011) represented the main key performance indicators that will build the view of achieving shareholder value. According to Visali, Roxburgh, Daruvala, Dietz, Lund, & Marrs (2011), there are revenue, cost/income ratio, taxes that a company must pay, risk-weighted assets that are bank's assets or off-balance sheet exposures, weighted according to risk, and tangible common equity (TCE) refers to the subset of shareholders' equity that is not preferred equity and not intangible assets. TCE is an uncommonly used measure of a company's financial strength. It indicates how much ownership equity owners of common stock would receive in the event of a company's liquidation. All this is referred to the return on shareholder's equity.

The evaluation of sustainable value according to Figge & Hahn (2004, 2005) was done in four steps:

- 1 step. How much return does the company create with its resources?
- 2 step. How much return would benchmark have created with each resource?
- 3 step. What is a value contribution on each resource?
- 4 step. How much sustainable value does the company creates?

To create a return, companies use a set of different resources. In this case the resources making an impact on environment such as: CO2 emissions, water, paper and energy waste.

Gross Value Added could be used as the return figure. Gross Value Added is obtained through sum of ordinary EBITDA and personnel expenses.

Gross Value Added is calculated using the formula:

$$GVA = EBITDA + Personnel\ Costs. \quad (1)$$

By obtaining GVA, it is possible to calculate the efficiency of the resources used by the company. For this purpose for each resource the return of the company is divided by the amount of resources used in 1 year:

$$E = GVA/A(R), \quad (2)$$

where: E – efficiency of the resource use by the company; $A(R)$ – amount of resources used in a period of one year.

In the second step the opportunity costs of corporate resources are determined. For this purpose, there is the need to calculate how much return would be created, if the resources were used not by the company, but by the benchmark. In this case it is looked for GDP of a region as the return figure and the amount of resources used by the region in 1 year.

$$E(B) = GDP/A(RB), \quad (3)$$

where: $E(B)$ – efficiency of the Benchmark; $A(RB)$ – amount of resources used by the benchmark in 1 year.

These efficiencies show how much return the benchmark creates per unit of resource. The efficiency of the benchmark can be used to calculate the opportunity costs of the resources of the bank.

$$OC = E(B) \times A(R), \quad (4)$$

where: OC – opportunity cost of the resources of the bank; $E(B)$ – efficiency of the benchmark; $A(R)$ – amount of resources used by bank in 1 year.

Next step would be to determine which resources are used by the company in a value-creating way. To obtain this, the return of the company creates and the opportunity costs are compared. In other words, the return of the company is compared to the return the benchmark would have created with resources of the bank.

$$VC = GVA - OC, \quad (5)$$

where: VC – value contribution; GVA – Gross Value Added of the bank; OC – opportunity cost of the resources of the bank.

The final step is Sustainable Value calculation of the bank.

$$SV = GVA - AOC, \quad (6)$$

where: SV – sustainable value of the bank; GVA – Gross Value Added of a bank; AOC – Average Opportunity Cost of the resources of the bank. Value is created only if the return exceeds the costs.

In addition to this, to know the differences of sustainable bank and other commercial banks during the economic downturn times, it is supposed to calculate EVA ratio for all the commercial banks on the territory of Lithuania and compare the results. The higher the EVA, the better performance results are represented by the bank. By this action it is possible to know if the sustainability approach helps financial institution overcome the critical economic downturn during the crisis time.

4. Case study and practical implementation

For the practical approach the commercial banks of Lithuania have been chosen. By this time, there are 10 biggest operating banks in Lithuania (by the Central Bank of Lithuania). Ten commercial banks that are analysed take place in Lithuania, three of which are Lithuanian, two subsidiaries of Sweden banks, part of Norway Bank, and

part of Latvian, Lithuanian Brands of three other banks. The data for analysis are taken from the bank’s annual reports for 2009, 2010 and 2011 years.

Only one bank – Bank9 – of all ten banks could be named as sustainable bank or “ethical”, “green” bank, according to its corporate social responsibility implementation, by which it cares not only about economic performance, but as well about the resources used by bank to maintain environmental friendly and social issues. Bank9 today is the one bank, which computes the resources used by bank, implements technological innovations in order to save the waste of these resources and cares about the return of the capital spent on it. However during the financial crisis, Bank1, Bank5 and Bank10 have started sustainable development strategy, but the main results appeared in post-crisis period (2011–2012), so the evaluation of sustainability of those banks would not be possible due to missing data through crisis time. That is why to evaluate sustainability is impossible to calculate for all the banks using the Figge & Hahn (2004, 2005) model, as the lack of data on the resources used are provided by the banks. For all other banks the shareholder value would be measured and compared with the sustainable bank.

Table 1. ROE in percentage of the banks in 2009–2011

	Bank1	Bank2	Bank3	Bank4	Bank5	Bank6	Bank7	Bank8	Bank9	Bank10
2009	-11.91	-49.11	-41.47	6.87	1.21	-12.96	-0.1	16.91	11.51	1.74
2010	8.05	-24.93	0.27	13.94	6.77	-11.2	-38.06	11.57	11.32	3.56
2011	12.16	3.59	-195.72	11.33	10.7	4.78	-32.36	12.41	10.37	1.48

The chart below shows the changing tendency of ROE of the banks during the crisis period:

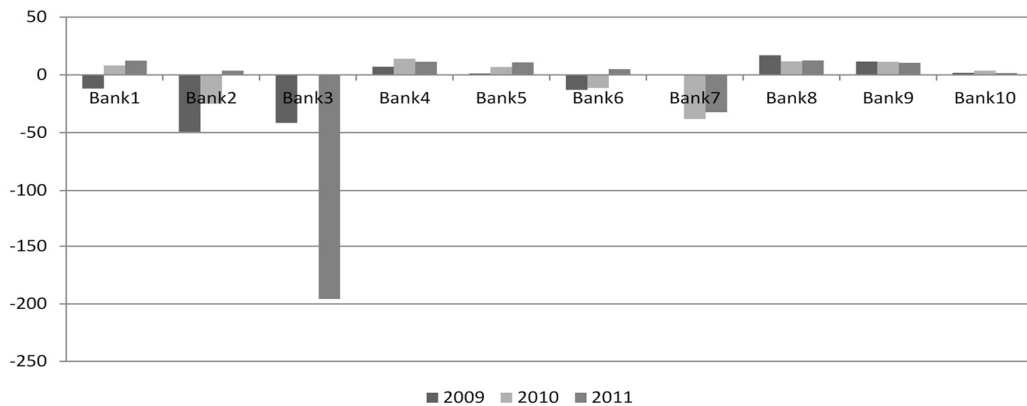


Fig. 4. Changing tendency of ROE of the banks in 2009–2011

As a result showed, the highest ROE during 2009–2011 periods have Bank9 and Bank8, a little bit less Bank4. Generally, a ROE between 15% and 20% is considered good. So, it could be said, that 7 of 10 Lithuanian bank’s ROE during the crisis was low, for Bank3 bank it is extremely low – reaching –198%. It means that the bank uses investment funds in unprofitable way to generate earnings growth.

By the McKinsey model (Visali *et al.*, 2011), the highest shareholder values have Bank9, Bank8 and Bank4 banks. The fast growing and recovering are Bank5 and Bank1.

After the measurement shareholder value of Lithuanian banks using McKinsey model (Visali *et al.*, 2011), Fiordelisi & Molyneux model considered of EVA ratio was implemented.

By the implementing EVA model, the mathematical expression of shareholder value would look so:

$$EVA = (RONA - WACC) \times Invested\ capital. \tag{7}$$

EVA is a critical driver of a company's stock performance. If EVA is positive but is expected to become less positive, it is not giving a very good signal. Conversely, if a company suffers negative EVA but is expected to rise

into a positive territory, a good buying signal is given. In the case of Bank9 EVA is positive that represent a strong shareholder value, that refers to the sustainability, especially during the crisis period, that was painful for all the banking industry, Bank9 reach the economic profit.

As the results show, the best economic profit has made Bank9 and Bank8. Moreover Bank7 bank has positive EVA in 2010 equal to 3398.06 thousands of EUR. Bank3 bank despite the extremely low ROE according to McKinsey model (Visali *et al.*, 2011), has quite high result of EVA during the crisis times to compare with other banks. Bank1, Bank5 and Bank4 banks during the crisis have almost the same EVA results, as the ROE of those banks differs a lot. The lowest EVA has Bank10 during the crisis, on the other hand ROE of Bank10 during the same period was 2–4%.

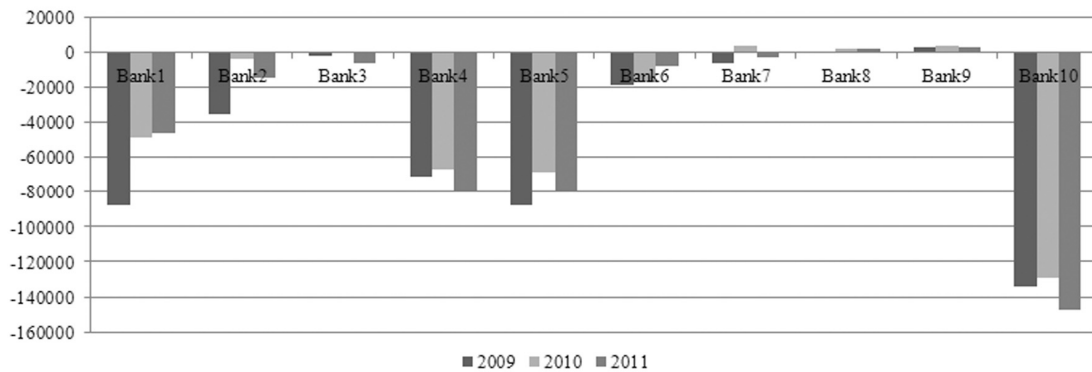


Fig. 5. EVA ratio of Lithuanian banks during crisis period (2009–2011)

By the results, it could be said, that EVA is more efficient way to measure shareholder value of the bank, as the major benefit of EVA is that it can be calculated and implemented at all levels of the financial institution.

Using the theoretical concept of cost of sustainability capital and Sustainable Value creation (Figge & Hahn, 2005), the application of the methodology is demonstrated. The methodology is suitable for the analysis of the sustainability performance of any form of economic activity or entity such as companies, regions, national economies, processes, or products. Using the Figge & Hahn (2004, 2005) approach of sustainability measurement, it is chosen Bank9 and its performance in 2009–2010 as an example.

Table 2 shows the economic, environmental, and social performance data for Bank9 in 2009. There are in use environmental and social impacts as proxies for the use of environmental and social capital. The use of natural and social capital translates into a flow of resources. These flows of resources can be measured in terms of environmental and social impacts. In this practical application is considered the following eight different forms of capital: Nonfinancial assets, CO₂, CH₄, SO₂, NO_x, CO, work accidents and PM. Net value added represent Bank9 contribution to the EU net domestic product.

Table 2. Amount of resources used by Bank9 in 2009 (based on data provided from the Bank9 Corporate Social Responsibility Reports for 2009–2011 years)

Bank9 Performance Data in 2009*	Amount
Nonfinancial assets [million EUR]	69.885
CO ₂ – emission (total)[t]	55
CO ₂ – emission (from travel) [t]	20
CO ₂ – emission (energy consumption)[t]	34
Paper Consumption[t]	5
Water Consumption [t]	370
Waste Management [t]	4

Note: t = metric tonne = megagram (Mg) = 103 kilograms (kg, SI) ≈ 1.102 short tons.

To create a return, companies use a set of different resources. Gross Value Added could be used as the return figure. Gross Value Added is obtained through sum of ordinary EBITDA and personnel expenses.

Table 3. Calculation of EBITDA of Bank9 in 2009

Calculation of EBITDA of Bank9 2009 (EUR, thousand EUR)	
Revenue	9073
Expences	-4512
EBIT	3075
Depreciation	140
EBITDA	3215

From the Table 3, EBITDA of Bank9 in 2009 is 3215 m EUR. Bank9 Gross Value Added in 2009 is 5939 m EUR. By obtaining GVA, it is possible to calculate the efficiency of the resources used by the company. For this purpose for each resource the return of the company is divided by the amount of resources used in 1 year.

In the second step the opportunity costs of corporate resources are determined. For this purpose, there is the need to calculate how much return would be created, if the resources were used not by the company, but by the benchmark. As the company uses the resources, the return the benchmark would create an opportunity cost.

To calculate the opportunity cost, it is needed to look at the resource efficiency of the benchmark. The resource efficiency of the benchmark is calculated by dividing the return of the benchmark by amount of each resource used by the benchmark, respectively. These efficiencies show how much return the benchmark creates per unit of resource. The benchmark is served as Lithuanian economy, when the Gross Domestic Product acts as the return figure. In this case, the efficiency of the benchmark shows how much GDP of Lithuania creates per resource unit.

The efficiency of benchmark can now be used to calculate the opportunity costs of the resources of the company. Opportunity cost is defined by the return that the benchmark would have created with the resources of the company. To find the opportunity cost, the efficiency of benchmark is multiplied with the amount of resources the company has used. Opportunity cost is determined for every resource used.

In order to know which resources are used by the company in value-creating way, there is a need to compare the return the company creates with the opportunity costs. In other words, the return of the company is compared to the return the benchmark would have created with resources of the company. For this purpose, the opportunity costs of each resource are subtracted from the Gross Value Added of the company. The result of this step is called value contribution. It shows how much more or less value a company creates with a resource compared to the benchmark.

Table 4. Value Contribution of the resources used by Bank9 in 2009

Resources [t]	Value of Bank9 in 2009 [thousands EUR]	Opportunity costs [thousands EUR]	Value Contribution [thousands EUR]
CO2 emission (Total/)	5939	140.2139806	5799
CO2 emission (from travel)	5939	251.2606138	5688
CO2 emission (energy consumption)	5939	284.7653775	5654
Paper consumption	5939	3052.96122	2886
Water consumption	5939	8647.405761	-2708
Waste management	5939	189.4236542	5750

In the Table 4 is shown that in the case of Bank9 in 2009 the value contribution of the Water Consumption is negative. Bank9 has created 2708 million less return than the benchmark would have created with this amount of water consumption. In other words, Bank9 has not covered the opportunity costs of the water consumption it has caused.

In the last step a Sustainable Value is calculated. So far, it has been calculated how much value each individual resource creates. However, companies use more than one resource. Now the target is to obtain how much value is created by the entire bundle of resources. Up to this, it was assumed that each individual resource creates the entire value by itself. Simply summing up all value contributions would thus the result of double counting. Therefore, to calculate Sustainable Value there it is needed to divide the sum of the value contributions by the number of resources considered.

Table 5. Calculation of Sustainable Value of Bank9 bank in 2009

Resources [t]	Value of Bank9 in 2009 [EUR]	Opportunity costs [EUR]	Value Contribution [EUR]
CO2 emission (Total/)	5939	140.2139806	5799
CO2 emission (from travel)	5939	251.2606138	5688
CO2 emission (energy consumption)	5939	284.7653775	5654
Paper consumption	5939	3052.96122	2886
Water consumption	5939	8647.405761	-2708
Waste management	5939	189.4236542	5750
		All resources Contribution:	23068
	Return	Cost	Value
	5939	2094.338436	3845

The calculation of sustainable value is expressed by subtracting total opportunity costs from the return of the company. Value is only created when the return exceeds the costs. This is the rule as for single resources, as for bundle of resources. Sustainable Value shows how much more or less return on company has created with its bundle of resources compared to a benchmark.

The calculation of Sustainable Value of Bank9 performance in 2009 illustrates, that Bank9 created a positive Sustainable Value equal to almost 3845 thousands of EUR. Gross Value Added covered total opportunity costs of its environmental resources. It means that Bank9 used its environmental resources in value creating way compared to Lithuania on average.

In order to join the different model to measure sustainability, it is needed to find out a positive connection. According the offered model of measurement sustainability, it is determined on the basis of theory, that the shareholder value plays a significant role in sustainable value. As sustainable value occupies economic, social and environmental aspects, there is a need of financial funds in order to cover last to issues. Economic performance could help with funding of environmental and social projects. That is why a shareholder value is so important in determining of sustainable value. To join the Fiordelisi and Molyneux model of identifying shareholder value with the model determining sustainable value offered by Figge & Hahn, it is important to find a positive link between Sustainable Value and EVA.

The sustainable value is calculated for Bank9 for 2009–2011 years using Figge & Hahn (2004, 2005) method. In The correlation coefficients are represented Table 6, however, the sample is too short and coefficients are not statistically significant. The positive connection between Sustainable Value and EVA could be strong and the model of evaluation shareholder value by Fiordelini & Molyneux and the sustainable value measurement model by the Figge & Hahn (2004, 2005) could be join into one, as the main indicators are positive connected. By the results of all the practical approach, it could be summed up, that the sustainable value measurement model could consist of two parts, the first one determining shareholder value with EVA key performance and the second part is the calculation of return on resource investment that is represented by the Figge & Hahn (2004, 2005) model. At the result, the outcome of shareholder value and sustainable value is compared and it could be determined if a bank has created a sustainable value.

Table 6. Correlation Analysis between Sustainable Value, EVA, WACC

	Sustainable value (thousands of EUR)	EVA (thousands of EUR)	WACC (%)
	3845	2264	5.31
	4402	3280	5.16
	4667	2850	5.38
Average	4304.666667	2798	5.283333
Variation	176026.3333	260092	0.012633
Av. D.	419.5549229	509.9922	0.112398
Correl.		0.727248	0.114122

According to the results of calculation, Bank9 has created a positive shareholder value during the crisis time. In 2009 EVA of Bank9 was 2264 thousands of EUR, in 2010 EVA of Bank9 was equal to 3280.52 thousands of EUR and in 2011 the EVA of Bank9 was 2850.32 thousands of EUR. By the sustainable value, Bank9 also stood positive with the 3845 thousands of EUR in 2009, in 2010 Bank9's sustainable value was 4402.94 thousands of EUR and in 2011 the sustainable value of Bank9 was 4667.12 thousands of EUR. And according to shareholder value and according to sustainable value measurement by the resources used, Bank9 has created a sustainable wealth and growth.

5. Conclusions

Sustainable value is not a new approach; furthermore, it is quite old issue that was mentioned in the beginning of XX century. Unfortunately, all this time all the business had an economic priority despite the type of business. Banking sector is one of the major sectors in the whole economy, as it interacts with all the participants of economy: either with government, business and customers. That is why so important for a bank to care about the interests about all the stakeholders, not only to reach a strong financial position.

The idea of sustainability gives new thinking to the banking sector, which recognizes the interdependencies of the economic, social, and environmental systems, and the connections between social and environmental challenges, on the one hand, and bank's level growth and innovation. Sustainability approach gives new possibilities for the banking industry, new challenges and the higher level as economic performance, as the model of every modern business: social responsible and environment friendly. And still there is no need to forget the direct bank obligatory – to provide financial services and increase economic profit. Sustainable development is as a new tool leading to sustainable value creation and growth. Unfortunately the financial crises showed the need to change the priority, as during the crisis, shareholder value significantly falls down. There is a need to implement a new model of value measurement and one of which could be sustainability.

The model to determine sustainable value of a bank was proposed. Proposed model combines Fiordelisi & Molyneux model to measure shareholder value through EVA ratio and Figge & Hahn model of finding out return on the resources used by the bank.

As a result of practical implementation of proposed model, shareholder value using EVA approach was obtained. Research results indicate that during financial crisis, almost all banks had negative economic performance. The positive shareholder value had Bank7, Bank8 and Bank9 (in 2010), Bank1, Bank4 and Bank5 during the crisis have almost the same EVA results, as the ROE of those banks differs a lot. Bank10 had the lowest EVA during the crisis; on the other hand ROE of Bank10 during the same period was 2–4%. Bank3 bank despite the extremely low ROE according to McKinsey model has quite high result of EVA during the crisis times to compare with other banks. To sum up, EVA model is more efficient to measure shareholder value, as the major benefit of EVA is that it can be calculated and implemented at all levels of the financial institution.

Sustainable value, determined by proposed model, shows that the Bank9 had created a value during the recession time in 2009–2011 (3845 thousands of EUR in 2009, in 2010 Bank9's sustainable value was 4402.94 thousands of EUR and in 2011 the sustainable value of Bank9 was 4667.12 thousands of EUR). Correlation analysis showed the positive connection between EVA and sustainable value. It means, that sustainable value, as well as shareholder value, is the key driver to the sustainable wealth and growths.

To sum up, sustainable development helps financial institutions to keep the positive, or not such harmful results due to the financial instability and by the implementing; it brings the benefits as positive economic performance, sustainable growth and the good market position.

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