Global economic crisis started in 2007 had revealed two main problems which appeared and grew within pre-crisis period. The first one is lack of entrepreneurial activity which leads to decrease in workplaces and progress (high tech sphere or biotechnology growth seems to be an exception which only proves the rule) – it can be easily seen from statistics analysis that there are only a few countries where entrepreneurial activity is growing while in the others even people with some entrepreneurial spirit prefer to become employees at big corporations. The second one is the misbalance in economic activities of real, financial and virtual sector enterprises. As far as statistics shows maximum profitability can be seen in banking (including investment banking) or virtual sector while both of them are in a certain way distributing tomorrow’s payments into today’s quickly achieved profits. Such attitude seem to suit shareholders who achieve extra income but is completely opposite to real entrepreneurial attitude since entrepreneurs are mainly concerned with making the world a better place to live instead of earning money quickly. Therefore the two stated problems are interrelated. This relation reveals the main problem of pre-crisis world which lead to global crisis: since social value produced by entrepreneurial units cannot be measured, it was considered unimportant and all the emphasis was put by entrepreneurs and especially hired managers into gaining profits as quick as possible (this can also be seen in economic models such as, for example, EVA model). This thesis is also proved by the research on corporate social responsibility or social entrepreneurship. Corporate social responsibility research is supposed to convince managers that being responsible can actually increase profits. Social entrepreneurship study sees social entrepreneurs as a special phenomena and is trying to figure out the reasons for social entrepreneurs’ economics success.

Both assumptions seem to be only a part of the truth. Analysis of successful entrepreneurial projects shows that they all were more or less social: almost all of the entrepreneurs had stated their main intention was to solve some problem of the society which as they believed (as well as their investors believed) could also bring them some income. Then if we take into consideration that all entrepreneurship is social it can lead us to the idea how to restructure the post-crisis world in order to increase entrepreneurial activity and pass the recession as soon as possible. This solution is partly based on Keynes’s ideas of crisis management which were mainly based upon recognition that entrepreneurial activity should be increased by all means and partly based upon social value recognition.

Currently there are only a few instruments for social value recognition if it is produced by entrepreneurs. One can mention tax exemptions imposed in case a company is doing charity and some relevant cases; in our opinion this is not enough. Regular entrepreneur who is trying to build long lasting business for example in the area of services is bound to receive lower profits than for example financial institutions producing derivatives. This means that an entrepreneur is going to attract less efficient
resources than financial institutions. On the other hand if we compare long lasting effect both of them have on the society (this one is simplified in order to make the main idea clear) we are to see that in 10 year perspective service oriented entrepreneur is making its local market a better place for the customers while the financial institution is producing problems to the society at least by means of producing high difference in people’s income. This situation is what we are facing now and which needs special instruments to be solved.

It has to be mentioned that market itself if based on laissez-faire principle is going to lead to solution of this problem but it would occur in a long period of time in case most of the customers become highly educated and tend to see long distance results of their current decisions (which is unlikely in global perspective). Henceforth the solution seem to be in government regulation which should be based not only upon economic results entrepreneurial units produce as it is done today, but should take into account both social and economic value produced by businesses (the idea had been featured in sustainable development doctrine but never came to implementation). For example, taxation should be based on both social and economic effect produced when negative social effect should lead to increase in tax rates as it is done today for casinos and green mailing where negative effect is obvious. This practice should be extended into other spheres on the basis of strict social value measuring system: in that case entrepreneurial activity would become more attractive that it is today which would lead to resources inflow in this sphere. On this basis the period of global recession can be shortened.

INTRODUCTION

Global economic crisis started in 2007 had revealed two main problems which appeared and grew within pre-crisis period. The first one is lack of entrepreneurial activity which leads to decrease in workplaces and progress (high tech sphere or biotechnology growth seems to be an exception which only proves the rule) – it can be easily seen from statistics analysis that there are only a few countries where entrepreneurial activity is growing while in the others even people with some entrepreneurial spirit prefer to become corporation employees. For example, as one can see from Global Entrepreneurship Monitor 2010 Global Report, innovation driven economies are providing the lowest rate of entrepreneurial activity (10.6% involved in early stage entrepreneurship activity in Iceland is maximum) while in factor driven economies entrepreneurial activity comes up to 52.2% in Vanuatu (absolute maximum) and there also are a few countries where entrepreneurial activity is over 30%. Again, in efficiency driven economies average early stage entrepreneurship activity is 11.7% which is higher rate than maximum in innovation driven economy group (GEM, 2011). Same tendency can be seen if one looks at the graph of established entrepreneurial activity – the leading countries within mentioned groups are different, but again most active are entrepreneurs coming from factor driven economies. It is also worth mentioning that only 34% of active entrepreneurs in factor driven economies are necessity-driven while a higher share are improvement driven ones. Moreover, according to R. Fairlie more than a half of entrepreneurs in world’s largest innovation driven economy, US, are immigrants, and this tendency is getting stronger through the period of 1996-2010 (Fairlie, 2011). All of the mentioned facts are implicit proof that in highly developed economies workforce prefers to become and employee rather than entrepreneur and it results in low entrepreneurial activity.

The second problem which was revealed by the crisis is the misbalance of economic activities in real, financial and virtual sector enterprises. As far as statistics shows maximum profitability can be seen in banking (including investment banking) or virtual sector of economy while both of them are in a certain way distributing tomorrow’s payments into today’s relatively high and quickly achieved profits. Such attitude seem to suit shareholders who achieve extra income but is completely opposite to real entrepreneurial attitude since entrepreneurs are mainly concerned with making the world a better place to leave instead of earning money quickly. The proof for this thesis can be also found in GEM 2010 Report – the countries with undeveloped financial and virtual sector seem to show higher entrepreneurial activity than those where the said sectors are mature. The described fact seems logical: in case financial sector is well-developed it starts to attract best resources and they are henceforth flowing out of entrepreneurial
sector. This leads to decrease of SME’s opening and results in economic and employment problems since companies which are 1 to 5 years old according to Kauffman’s 2011 State of Entrepreneurship Address are creating more than 60% of new jobs while mature companies which are over 10 years old create approximately 10% of new jobs. This means that lack of entrepreneurial activity would certainly lead to great economic problems which had been proven by the crisis.

In our opinion the two stated problems are interrelated. This relation reveals the main problem of pre-crisis world which became one of the most important reasons of global crisis: entrepreneurs are creating social value which is highly underestimated by policymakers and practitioners while being one of the most important motivators for creation of new venture. By social value here we mean all the non-financial outcome that arises from entrepreneurial activity, including happiness, ecological situation, knowledge etc., and it is worth mentioning that social value created by entrepreneurs can be both positive and negative which is essential for conclusions and recommendations which would be provided in this paper. In general entrepreneurs are driven by desire to make meaning: (a) increase the quality of life, (b) right a wrong or (c) to prevent the end of something good (Kawasaki, 2004), and this particular intention might become a basement for recovery in case it is could be regulated and stimulated. The opposite to entrepreneurial behavior is solid profit-orientation which became one of the reasons that provoked crisis: since social value produced by entrepreneurial units cannot be measured, it was considered unimportant and all the emphasis was put by entrepreneurs and especially hired managers into gaining profits as quick as possible (this can also be seen in economic models such as, for example, EVA model), and this resulted in unsustainable model of pre-crisis development.

SOCIAL ENTREPRENEURSHIP AND SOCIAL RESPONSIBILITY: PHENOMENA VERSUS ENTREPRENEURIAL NATURE

Nowadays social value creation is studied within management theory as phenomena of corporate social responsibility and within entrepreneurship theory as phenomena of social entrepreneurship. In order to understand, how does social value creation affect entrepreneurial behavior we first need to take a closer look at the existing research.

During past years quite a bit of research on the issue whether being socially responsible affects company’s performance and achieved results can lead to opposite conclusions. Some of this research (see, for example Carroll, 1979, Collins & Porras, 1994, Porter & Kramer, 2006) shows that there is positive relation, and if a company is active in CSR its financial results are getting better as well. Others argue, that mentioned relation is at least mixed and CSR can lead to financial losses as well as to financial gains, and existing empirical papers are a proof of that (see for example Margolis & Walsh, 2001, De Bakker, Groenewegen & Den Hond, 2005). Such contradictory results mean that there are no direct relation between CSR and financial performance which means that in case society is interested in socially responsible companies some specific regulation measures should be implemented to stimulate them.

Social entrepreneurship researches studies social entrepreneurs as a special phenomena and is aiming to figure out the reasons for social entrepreneurs’ economics success. But analysis of social entrepreneurship definitions (by Dacin, Dacin & Matear, 2010) shows that one cannot clearly define what social entrepreneur is: it is stated that social entrepreneur addressed social need, but in general all entrepreneurs are addressing certain societal needs (Schramm, 2010). The same thing was as well mentioned by Mair (Mair, 2006) who insists that all successful entrepreneurs are generating some social value. Mentioned research results lead to a conclusion that by nature all entrepreneurship is social, the trend to stop being socially active arises not from the nature of entrepreneurship but out of state of environment.

One can see the following evaluation of business structure: it seems that if successful entrepreneur is managing company it is true it keeps creating social value; on the opposite, if company is being driven by techno structure (Galbraith, 2008) this is not necessary. It is entrepreneur’s intention in company creation to make meaning (empirical research shows that this is true for necessity driven ventures as well: almost all of the entrepreneurs had stated their main intention was to solve some problem of the society which as
they believed could also bring them some income) but when venture grows and is henceforth managed by employees it is not necessarily keeping to create positive social value. Last year had provided the evidence that multinational companies where building their profits by means of negative social value creation (Daimler-Benz corruption scandal is an example).

If we take into consideration that all entrepreneurship is social it can lead us to the idea how to restructure the post-crisis world in order to increase entrepreneurial activity and pass the recession as soon as possible. This solution is partly based on Keynes’s ideas of crisis management which were mainly based upon recognition that entrepreneurial activity should be increased by all means and partly based upon social value recognition. This idea is supported by father of social entrepreneurship, G. Dees, who argues: “How many businesses would start from scratch and go to scale if we didn't have venture capital? If we didn't have banking and financial infrastructure to support business growth? If we didn't have business schools? We have a very elaborate support structure for business entrepreneurs. ... Without something similar for social entrepreneurship, we can't expect to see the same kind of scaling and impact.” (Brookes, 2010).

There are two main arguments against this thesis. First one is that special regulation of social value creation by state authorities is being against the nature of entrepreneurship. This could be true if such regulation would be direct, but in this paper it will be shown that institutional type of regulation can be provided for social value creation. No one argues that taxation as a regulation tool is against the nature of entrepreneurship: so the only problem is to create a similar type of instrument for social value regulation. The second argument against social value creation regulation is that social result cannot be measured and henceforth cannot be managed, so no regulation tools could be provided for government policies stimulating social value creation. In this paper we need to take a closer look at this issue in order to prove it wrong.

**THEORETICAL APPROACH TOWARDS SOCIAL COST, BENEFITS AND EFFICIENCY MEASURING: IS SUCH MEASUREMENT POSSIBLE?**

In terms of marginal theory social efficiency is the optimal distribution of resources in society, taking into account all external costs and benefits as well as internal costs and benefits. Social Efficiency occurs at an output where Marginal Social Benefit (MSB) = Marginal Social Cost (MSC) (see for example Watkins, 1981). In this case market price of a good is defined by the customer according to his/her estimation of good’s utility and amount of goods stock – in this case the bigger the stock is the lower is good’s utility for the customer, and the price is defined by marginal utility. Such an approach leaves the problem of measurement for social costs and benefits unsolved. And henceforth it is argued that the said effect and costs cannot be measured at all. For instance, Globerman argues: “How are social values of different outputs and inputs established? After all, consumers are unlikely to have identical tastes and preferences, while workers, landowners, and other suppliers of inputs are likely to differ in their skill levels and other endowments. Hence, members of society will differ in their individual valuations of the many different outputs and inputs that characterize economies. In capitalist economies, the forces of supply and demand establish the values of outputs and inputs. Specifically, market-clearing prices, that is, prices that equate supply and demand, ordinarily serve as measures of value. The reliance on market-clearing prices as measures of social value can be conceptually justified by acknowledging that buyers should be willing to pay, at a maximum, what any quantity of a good is worth to them rather than go without that good. This implies that the market demand curve for a good should represent the valuation that consumers, in the aggregate, place on different quantities of the good. Similarly, sellers should be willing to supply to buyers any given quantity of a good only if the price received at least covers the incremental cost of supplying that quantity. This, in turn, implies that the market supply curve for a good can be taken to represent the incremental cost of supplying different quantities of the good in question. Under reasonable assumptions, the market demand curve is presumed to be downward sloping, while the market supply curve is presumed to be upward sloping.” (Globerman, 2011). At the same time empirical
evidence proves that consumers are not intending to buy, for example, fair trade goods just for the reason they provide certain social value, the cost of the product remains the priority choice characteristic.

A standard assumption in the economic theory of production is free disposability, meaning that if the point \((x, y)\), for an output \(y\) and inputs \(x\), is in the producer's production set then so too is any point \((x', y')\) such that \(x' > x\) and \(y' < y\). As noted in the last section, the assumption of free disposability has been invoked explicitly in some studies of social efficiency and is implicit in other studies. This may be a defensible assumption for a production process (though it can certainly be questioned in that context). But how can we interpret the application of this assumption to (say) life expectancy as the "output" and public spending on health as the "input"? There are (thankfully) very few governments in the world that can freely dispose of their citizens such that if the country initially has a life expectancy of (say) 60 years, and health spending of (say) $100 per person per year, it is equally feasible for it to have a life expectancy of 40 at the same or greater spending. The applicability of production theory to measuring social efficiency is questionable. Social indicators do not stem from anything one could reasonably think of as a production function representing a well-defined technology operated by an individual producer with well-defined physical inputs. While there are production functions under the surface somewhere, there is clearly a lot more going on in determining the aggregate relationship between measured social outcomes and social spending and/or national income (Ravallion, 2003).

As the result of mentioned measuring problems social efficiency is addressed by researches as a certain aggregate of life quality, working conditions, state of environment, people’s free time etc. when none of the above can become worse as a result of certain decision implementation (Pareto efficiency). But if one looks at empirical evidence he can find out that measures leading to decrease of mentioned parameters are frequently implemented if they provide high economic effect and this allows some researches make a statement that social efficiency does not exist in market economy. For example, one of Rizzo's (Rizzo, 1979) major points is that the concept of efficiency has no meaning apart from the pursuit of specified ends. But he concedes too much when he states, at least at the beginning of his paper, that "of course it [the common law] is efficient" relative to certain specified goals. For there are several layers of grave fallacy involved in the very concept of efficiency as applied to social institutions or policies: (1) the problem is not only in specifying ends but also in deciding whose ends are to be pursued; (2) individual ends are bound to conflict, and therefore any additive concept of social efficiency is meaningless; and (3) even each individual's actions cannot be assumed to be "efficient"; indeed, they undoubtedly will not be. Hence, efficiency is an erroneous concept even when applied to each individual's actions directed toward his ends; it is a fortiori a meaningless concept when it includes more than one individual, let alone an entire society.

Let us take a given individual. Since his own ends are clearly given and he acts to pursue them, surely at least his actions can be considered efficient. But no, they may not, for in order for him to act efficiently, he would have to possess perfect knowledge—perfect knowledge of the best technology, of future actions and reactions by other people, and of future natural events. But since no one can ever have perfect knowledge of the future, no one's action can be called "efficient." We live in a world of uncertainty. Efficiency is therefore a chimera. (Rizzo, 1979). In continuation of this argument Rothbard argues that “Not only is "efficiency" a myth, then, but so too is any concept of social or additive cost, or even an objectively determinable cost for each individual. But if cost is individual, ephemeral, and purely subjective, then it follows that no policy conclusions, including conclusions about law, can be derived from or even make use of such a concept. There can be no valid or meaningful cost-benefit analysis of political or legal decisions or institutions.” (Rothbard, 2006). This argument leads the author to a conclusion that ethics should be implemented heavily and in that case only social efficiency would occur. As it can be seen mentioned arguments are based upon thesis substitution. Logic used to prove that social efficiency cannot be measured due to the fact that individuals have different opinions on what social costs and benefits are, and it is impossible to argue on that issue. At the same time this does not mean that social value creation cannot be measured for the purpose of regulation. Let us give an analogy. Average people’s income, salary, physical characteristics (such as weight of height) cannot be measured as well since they would be very different to each individual. But existing business and government
structures are completely ignoring this fact when they are developing their regulation and market policies which are quite efficient. The answer to the challenge put by Rizzo and Rothbard is that in order to develop a policy to stimulate entrepreneurial creation of social value one does not need to measure individual social costs and benefits – instead average social costs and benefits should be used, so we would be implementing the law of averages in order to develop a basement for regulation of social value creation.

The necessity of such regulation instrument is the following. Nowadays a business structure which is able to create high profits while providing society with negative social value is not being responsible for the latter. Henceforth entrepreneur who is creating both positive economic and social value is usually dealing with extra costs (since he or she spends some money for positive social value creation). Since there is no direct relation between such behavior and financial results (as it is proven in CSR research) in approximately half of the cases such an entrepreneur is developing competitive disadvantage for his/her business. This became one of the reasons of unsustainable economy development which we had witnessed in pre-crisis period and which seems to be restored today. Henceforth a special mechanism for positive social value creation as a basement for post crisis recovery and building a sustainable economic model is needed. Dr. Dees puts it that way: “We badly need greater clarity and transparency in performance evaluation and assessment. That would give skeptics confidence that we're achieving the impact we're claiming to achieve. But that's a small piece of a larger puzzle. We need improved legal structures, better financial mechanisms, better pipelines for talent, and more directed education and training. We need all of that, and a culture that understands social entrepreneurship and supports it.” (Brookes, 2010).

SOCIAL VALUE MEASURING INSTRUMENT DEVELOPMENT

Before moving towards development of social value measuring instrument that can be used for regulation policies, we need to mention that currently some research results on measuring social benefits and costs are being published (see for example Blanchflower & Oswald, 2011). An approach suggested in this paper is based upon empirical research.

Analysis of real, financial and virtual sector company’s performance based upon the data assembled from over 170 Russian enterprises had shown, that in case company is creating zero social value approximately 1/10 of its profits is gained because employees and agents are not being dissatisfied with entrepreneurial venture actions. This figure came out of chronological comparative analysis of company performance which was provided in cases of relatively stable economic development and different approach towards social value creation in different periods taken into consideration for the purpose of analysis. It was also estimated, that there is a relation between creation of positive social and economic value by an entrepreneurial unit, and this relation has two specific features: it is non-linear and tends to be reproduced on self-similarity basis both in case of positive and negative social value creation. Those two features meant that mathematical framework to be used for social value modeling should be based on those specific features. Henceforth fractal theory was chosen as mathematical framework. Though fractal is not clearly defined by mathematicians nowadays, it is being addressed as a set of fractional dimension. According to Mandelbrot, the author of fractal theory, fractal is a rough or fragmented geometric shape that can be split into parts, each of which is (at least approximately) a reduced-size copy of the whole (Mandelbrot, 1982), which means that fractal is both non-linear and self-similar.

In order to solve the problem of social benefit measurement in value terms a fractal with interstitial dimension from 1.2 to 1.3 (this dimension is defined by estimated type of relation between social and economic value creation by an entrepreneurial unit) should be chosen as a basic figure for mathematical modeling. This chosen figure should also have a feature of continuity and is to be directed into external environment. According to developed set of features Koch snowflake curve was chosen (see Figure 1).

When the selected fractal is used in order to solve the problem of social benefit measurement it can be changing in four different ways according to type and trend of social result created by entrepreneurial structure:
- in case created social value is changing evenly in one direction (entrepreneur is creating only positive or only negative social value) Koch curve will have its classical shape as shown on Figure 1;

**FIGURE 1**
FIRST FOUR ITERATIONS OF KOCH SNOWFLAKE

![Koch Snowflake](http://mathworld.wolfram.com/KochSnowflake.html)

- in case created social value is changing unevenly in one direction Koch curve will be changing partially in comparison to classical shape – for example as it is show on Figure 2;

**FIGURE 2**
FIRST THREE ITERATIONS OF KOCH SNOWFLAKE
(UNEVEN ONE DIRECTION CHANGE)

![Koch Snowflake](http://mathworld.wolfram.com/KochSnowflake.html)

- in case created social value is changing evenly in opposite directions Koch curve will be changing partially in comparison to classical shape – for example as it is show on Figure 3;

**FIGURE 3**
FIRST THREE ITERATIONS OF KOCH SNOWFLAKE
(EVEN OPPOSITE DIRECTIONS CHANGE)

![Koch Snowflake](http://mathworld.wolfram.com/KochSnowflake.html)

- in case created social value is changing unevenly in opposite directions Koch curve will be changing partially in comparison to classical shape – for example as it is show on Figure 4.
The length of initial figure rib in all cases is 1/20 of entrepreneurial structure profit received on the initial stage, and henceforth the area of initial fractal is equal to share of the profit received due to creation of social value. The difference between fractal areas at the end current and previous period is the measure of social result produced in value terms. Finally, single change of Koch curve in this model occurs when all criteria influencing social value created change by 10% from initial state. In case the change is higher (lower) than 10%, the basic length for next Koch curve iteration is changing proportionally. Social value which is measured in value terms according to the described algorithm becomes a basement for social benefit creation regulation procedures.

**FIGURE 4**

**FIRST THREE ITERATIONS OF KOCH SNOWFLAKE (UNEVEN OPPOSITE DIRECTIONS CHANGE)**

![Initial shape](initial_shape.png) ![State at the end of 1st period](period_1.png) ![State at the end of 2nd period](period_2.png)

SOCIAL VALUE CREATION REGULATION MECHANISM DEVELOPMENT

In this paper we will be suggesting two main mechanisms for social value creation regulation. First one is a modified quota mechanism (an analog of the one introduced by Kyoto protocol). In terms of positive social value creation stimulation it could be used in the following way. On the first stage minimum (basic) acceptable social value level (for region or country, according to regulation level) is to be estimated. In case entrepreneur is producing social value which is lower than basic level, he/she should buy a quota equal to negative social value created from government authorities or companies producing positive social value. This would allow launching compensation mechanism which would allow entrepreneurs who produce positive social value transform it into income which should lead to increase in economic system sustainability. Within this mechanism the main problem is a problem of basic social value level estimation, which we suggest to be considered equal to zero at initial stage of regulation in case that:

- the level of labor turnover in an entrepreneurial structure is now exceeding normal;
- entrepreneurial unit performance is transparent (according to global standards);
- company’s agents assess information on entrepreneurial unit performance as clear and understandable;
- claim for replacement is not exceeded the rate which is considered normal of the country, region and industry;
- entrepreneurial unit is ecologically safe (according to national and regional requirements);
- government and society do not have valid claims on company performance.

Using the same basic level of positive social value creation and suggested mechanism for social value amount estimation in value terms the other way of entrepreneurial social value creation stimulation can be implemented. This second mechanism should imply tax preferences for entrepreneurial structures which are creating positive social value (social value volume in that case should be subtracted from taxation.
basement), and tax extras in the opposite case. As it can be seen both mechanisms are to be used in order to provide balance between social and economic entrepreneurial value creation.

CONCLUSIONS AND FUTURE RESEARCH

Framework and policy approaches suggested in this paper are to be used in order to stimulate natural entrepreneurial desire to provide social value to society and build a sustainable economic model of post-crisis world on this basement. In order to achieve this result a solution of two main theoretical and empirical problems was suggested. First of all it was proven that entrepreneurial social value creation regulation mechanisms could be developed and could be transparent and reliable those it was earlier argued by some researches that this is impossible. Second, a framework for social value creation measurement in value terms was provided together with suggestions on basic level of social value estimation – and those two are the essential part of regulation mechanisms. We can also make a conclusion that suggested approach does not contradict with the nature of entrepreneurship, it is not providing any unbearable restrictions for entrepreneurs and can be used in order to improve both economic and social efficiency of certain socio-economic system.

But still there are some questions that need to be addressed in future research. First of all, some measuring assumptions are based on single country empirical information which is enough to make a suggestion, but not to prove suggested thesis. Future research should clarify this issue. Second, more search is needed to define criteria which are to be used in order to estimate basic level of positive social value creation. Those criterions are probably different in different types of entrepreneurial environment. Again this issue does not affect suggested framework but is very essential for policy making. Finally the role of simultaneous regulation of social and economic value created by entrepreneurs in building the basement for sustainable economic growth should be searched as well, though existing evidence shows such an approach would allow increasing both social and economic value of performance since it will stimulate entrepreneurs to create higher social value while being economically efficient.

REFERENCES


