



## HUNTING FOR SUSTAINABLE INVESTMENT RETURN IN GLOBAL FINANCIAL MARKETS

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**Abstract.** The main objective of this article is to identify the content of globalization process in financial markets, while offering a universal method of investment, which could generate the sustainable investment return and save the investors' interest - to expand the geography of investment, without leaving of attention the innovative activities in any global financial market segments. The main road, which was chosen by authors, is the search of sustainable investment return possibilities, for which many scientists use various investment models, concepts and researches. The authors propose to apply adequate portfolio model for sustainable investment return searching. Illustrating the possibilities of their idea, authors provide the set of investment results in global currency and capital markets that allows monitoring the long-term investment experiment for the reader.

**Keywords:** investment, adequate portfolio model, sustainability, return, uncertainty, globalization.

**JEL classification:** G11, G17.

### 1. Introduction

In recent decades the phenomena of globalization found themselves in the center of academic community and the public media spotlight.

Along with that, discussions go on the content of deep reasons that determine the globalization intensity, propulsions, social forms and perspectives, which transform into the subjective evaluations that determine the interests and behavior of various social groups. The approach to the consequences of globalization leads to people practical action, or even provoke social conflicts, so the main focus should be given to innovative policy solutions in the era of globalization. Globalization, for this purpose, must be understood not only as a process of extending the interaction between the public and the events, with which directly related sustainability of human existence, but also as a cause, which may open the way for uncontrolled conflict.

The fact that more areas than social processes, the economy and ecology are covered does not mean that the initial – on the basis of the three mentioned components formed sustainable development problems are solved. The pragmatic reason is that the solutions of management development depend on significantly larger set of circumstances (Rutkauskas, Kvietkauskienė 2012).

One of most urgent questions – what will be the status of globalization sustainability of the

earth, or what forms the sustainability of human existence on development of the process of globalization.

Many scientists (Kilbourn 2004, Najam *et al.* 2007, Stiglitz 2002) in their works emphasize that globalization is an irreversible process, which often is presented as a huge international market, the information revolution, universal promotion of human rights, the global industrial culture, polycentric international policy for the influence on daily lives of people. This is the core moments of the positive effects of globalization.

However, in another side of the visible and the negative effects of globalization on the lives of people all over the world – global pollution, international cultural conflicts, natural disasters.

According to Held *et al.* (1999), the chunky capital of financial markets is dominant in the interests of all over the world, therefore, the process of globalization taking place on global equity interests. Whereas the passing force of globalization is globalization of financial markets, it is important to know the adequate forms and motives of capital movement in the financial markets. Capital travels are accompanied by innovative capital solutions and emerging individual interests. Therefore, it is particularly important to understand the anatomy of the decision formation in global finance market.

The main purpose of the article is to identify decision making concept and methods analyzing the following issues:

- Identify and disclose the main globalization processes and assumptions in the key globalization highway – international financial markets;
- To discuss concepts' linkups and a common goal formation of sustainable investment and sustainable investment return, finding out sustainable investment return possibilities in global financial markets;
- Concretizing cases of development and behavior sustainability conceptions in investment process and generation of investment return, suggesting sustainable quantitative measuring concept and methods how to find sustainable investment return in global financial market nowadays;
- To show that global financial markets are effective partners of various businesses in non-global areas searching for sustainable return in financial markets and creating possibilities of vouching strategies.

The main research methods selected were adequate investment portfolio idea, multicriteria stochastic optimization, random fields of stochastic optimization ideas and methods.

Hypothesis – there are strategies, which allow taking the positive decisions that ensure the sustainability of return in global financial markets.

## 2. Dimensions, causes and assumptions of globalization

Globalization is especially powerful tool for the new world economic system, as well as in the formation of international relations. While talking about globalization, many scientists and academics examine the different types of globalization and use the term of globalization for related but different phenomena describing: the economic, social, political and business effects, therefore the measurement of globalization must be complex. There is a need to measure the phenomenon of globalization as a whole, i.e. to establish an integrated set of indicators – globalization index in order to determine the degree of globalization of different countries.

The most famous and most cited are two globalization indices that combine the separate fields of globalization indicators: Kearney (2007) globalization index and Dreher (2006) globalization index. Kearney globalization index comprehensively measures the resolution of globalization processes and covers the most important displacements globalization components, which include international relations, international trade, financial flows and

information flow of people and ideas across national borders (Kearney 2007).

Another index used to assess the extent of globalization – Dreher globalization index, calculated since 1970. This index includes evaluation of three main areas of globalization: economic, social and political (Dreher 2006).

In many scientific works the arguments which identify globalization as phenomenon which leads to substantial changes in the world and create a new business environment where a business or economy entities re-take the leading business solutions can be found (Dicken, 2009; Held *et al.* 1999, Bhagwati 2004; Lucas 2007).

World economies are increasingly integrated into the global economy. Such process is conditioned by the stimulus strength of globalization. It is possible to distinguish following reasons and assumptions of globalization: the global use of land resources, the convergence of existence quality, globalization challenges for state of the sustainability, the economic efficiency of development, discoveries and technological opportunities, communication improvement, cross-cultural integration, adequate opportunities of education and qualification, fundamental scientific discoveries and technological opportunities (Fig. 1). These are the main factors that create the potential for economic activity and its entities for allocation of resources on a global scale.

It is important to note that only the overall combination of the forces of globalization would encourage the entities of the world economy to join the international (intellectual) and globalized entrepreneurship.

According to some proponents of globalization (Zedillo 2008; Scherer Palazo 2011; Guillen 2000; Kose *et al.* 2009) a systematic understanding of the global economy in the first place puts the user of global market, because in the emerging area of global economy the user becomes the main leverage of globalization. Therefore, it is important that the subjects of world economy will be involved in the integrated supply and production systems at the international level, and, as more fully, incurred the advantages offered by globalization.

It can be inferred more adequately about the impact of the globalization process for the world from the circumstances of the formation rate of return for each financial active similarly to profitability rate in currency exchange and capital markets, where dominated interactions of supply and demand and profitability value are visible in the event of the supply and demand balance (Rutkauskas 2000, 2006). The emergence of profitability values is appropriate to monitor in the context of uncertainty, i.e. after development a distribution possibilities probability rate.

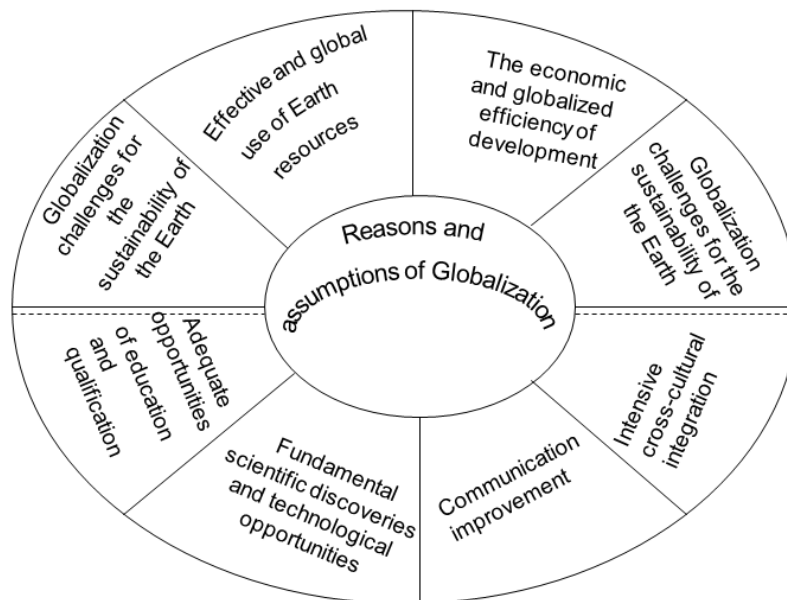


Fig. 1. The causes and assumptions of globalization (source: compiled by authors)

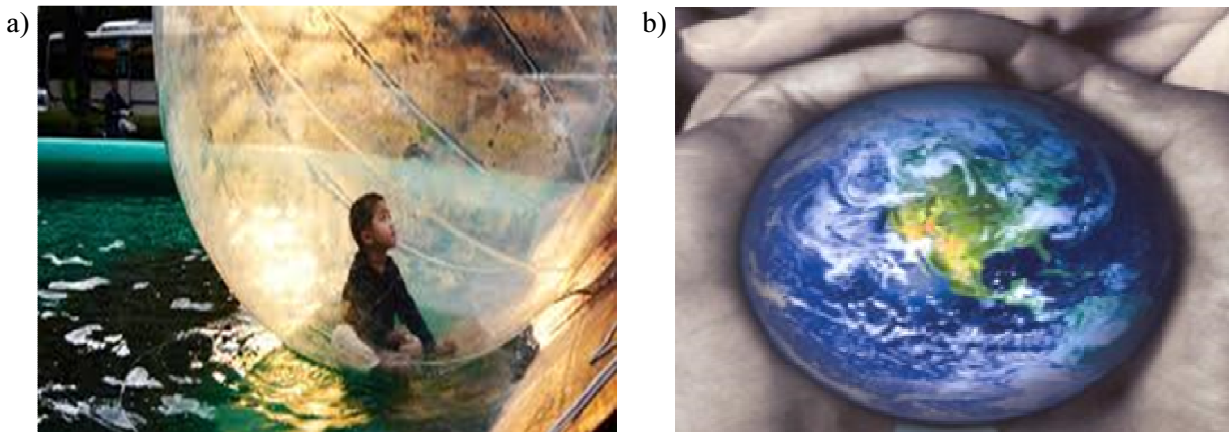


Fig. 2. The planet Earth: a) before globalization (source: Resnick 2014)  
b) after globalization (source: Globalization Globe in Hands 2014)

It is thus possible to monitor how objectively the assumptions of financial assets' rate of return are formed – the possibilities probability distribution for the specific market. These opportunities in every market and every moment are different, but they obey for a given standard, i.e. enough to accurately and reliably approximated by one of the probability distributions (Rutkauskas 2006).

### 3. Sustainability in financial markets: does sustainable investing generate sustainable return?

Nowadays, sustainable investing can be a great win for investors and companies. The majority of market participants know about sustainability development in financial markets. Many of investment banks propose to manage some funds according to financial sustainability; all big firms publish environmental, social and community indicators. So, it seems that Sustainable investing take an important place.

It is very difficult to measure quantitatively sustainability because there are many confrontations with an immediate problem, in that sustainability has become used in very different contexts that have almost become meaningless.

Not many authors (Rutkauskas, Stasytytė (2012); Clarck, Dickson (2003); Blackburn (2007); Sinclair (2011)) do their researches in sustainability science, because it is a plenty new approach. For example, Campbell (2009) describes sustainability as a concept, which is about the same things that engineering is about – achieving outcomes in responsible ways. It is about achieving a specified objective in a way that can produce investment return.

Nowadays, sustainability science analyzes the consequences of global environmental, but yet not much research has been done in this area.

When it is talked about sustainability and sustainable development, investment can be understood as a discussion between present and future.

What is more, it is very important to analyze whether today's capital investments will give the required return in the future and allow us to understand the way in which we can help future generation to satisfy its needs (Rutkauskas 2012).

Over the decades, the major goal of every business was financial profit, but in view of the ongoing process of global sustainability, the goal of financial profit must be balanced with social and environmental goals. In this way, social and environmental systems can lead to solutions that have long-term financial viability and generate not only financial profit but already wealth. So, according to this view, financial profit can be achieved without damage to society or the environment.

Sustainable Investing (hereinafter – SI) – is the investment approach that integrates long-term environmental, social and governance criteria into investment and ownership decisions with an objective generated goal assessing of the financial return on risk.

These financial criteria are used in conjunction with traditional financial criteria, such as cash flow and price-value ratio. The main focus of risk-weighted financial returns is distinguished in sustainable investing. So, Sustainable investing can be defined as a conforming to attitude of institutional investors to increase the financial return assessing the risk (Colin 2008; Kiss *at al.* 2012).

The majority of empirical research shows that sustainable investing approach can lead to a better financial return balanced with the risk. However, only a small percentage of investors incorporate environmental and social factors into their investment and decision-making process. Sustainable investing has the potential to become a major approach among investors, especially those who are willing to take a long-term perspective (Renne-Malone 2010).

In view of globalization processes, sustainable investing is used as a generic term to describe the long-term environmental, social and corporate governance criteria in order to contribute to sustainable development, integrating the financial goals of investors, environmental and social problems (Rutkauskas 2008).

The primary model of sustainable investing is of long-term investing that is intergenerationally efficient and fair (Eisenhower 2011).

Many scientists in their works describe the methodology of sustainable return on investment. According to them, investors can earn more investing return with higher guarantee using sustainable return on investment (hereinafter – SROI) methodology that identifies the initiatives to accomplish main goals and optimize the total value of investing decision (Malik 2012).

This methodology can determine the full value of investments by attributing monetary values to all costs and benefits of investment decision – economic, social and environmental (Fig. 3). SROI provides the business for making sustainability decisions that can make investments economically, socially and environmentally sustainable return on investments (Fig. 3).



**Fig. 3.** Sustainable Return on Investment (source: Sustainable Return... 2012)

Now we will try to answer question which was formulated at the beginning of the chapter: does sustainable investment generate sustainable return? To answer this question would be very difficult while we do not have quantified evidences of sustainable investment and sustainable return. We can easily find definitions in scientific literature, that sustainable investment is investment that generates sustainable return. But correct definition still is unknown.

Authors of the article are keen to tend that sustainable investment in some way regulated behavior of investor. Sustainable return – is the return as stochastic variable or process case, which has some features and meets some investor's needs and what is very important that it reveals wasted resources and creates relationships of generation in the future. So, sustainable return reveals relationships of recipient between today investor's and future investment achievements.

Authors, dealing with investment return perspective possibilities and becoming of historical investment return, threat these possibilities as stochastic processes using parametric statistical methods for identification. Considering the established categories of investment return, authors invoke adequate investment portfolio model, which is based on idea of potential efficient surface of return (Rutkauskas, Stasytytė 2011a; Rutkauskas 2012). This idea is based on H. Markowitz conception of efficient line, and it lets to treat investment return possibilities set as H.

Markowitz random field (Rutkauskas, Stasytytė 2011b). These assumptions let us prepare original technique of stochastic optimization.

**4. Adequate portfolio as universal tool for searching sustainable investment return**

Assumption made about the fact that during intense globalization the behavior of financial markets is converging, since it enables to expect the individual investment opportunities in different markets. However, analogous opportunities for investor should ensure the homogenization of market behavior. If an investor wants to invest successfully in different markets or choose a portfolio of investments formed of different assets of the market, he should select a universal tool for investment decisions. In this experiment, for such a role has been invoked adequate investment portfolio (Rutkauskas 2006). The adequate portfolio allows to perform the following functions quantitatively:

- take into account the efficiency of opportunities distribution and submitted compositions;
- practically approximate measures of financial risk;
- uniquely assess any potential opportunities of portfolio return on the basis of their efficiency, reliability and risks.

The formation of investment portfolios are based on modern models: Sharpe, Markowitz, Treynor et al. Using historical simulation, Markowitz and many other scientists use the arithmetic average of return in order to determine the expected profitability. However, the average may not

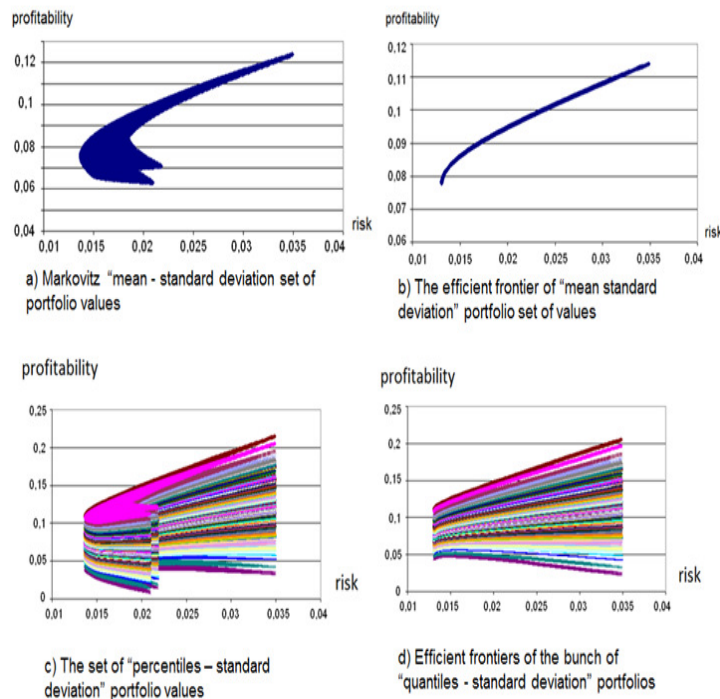
reflect the actual expected return on financial instrument due to presence of uncertainty in financial markets and cyclical fluctuations, because, in the opinion of authors, there is not enough these widely used approaches for finding a constructive investment decision.

In many situations of the investment it is necessary to assess all possibilities for an investor in order to choose the best, so for the decision making of investment the authors rely on adequate portfolio.

The credo of adequate portfolio – to consider all possibilities for investor and to assess each of the possibilities in accordance to three characterized needs: profitability, reliability and riskiness. The anatomy of adequate portfolio will be provided with Markowitz portfolio, because of our understanding, the adequate portfolio – is a natural extension of the Markowitz portfolio.

If the set of possibilities of Markowitz portfolio (Fig. 4 top row) generates an effective line, where the possibilities of optimal solution concentrate and each of them is described as possibilities of average profitability and riskiness, then the bouquet of possibilities for adequate portfolio generates the bouquet of effective lines (Fig. 4 bottom row).

Below (Fig. 5), if the optimal solution in Markowitz portfolio is indicated by tangency of efficiency line and utility curve (bottom row in Fig. 5), the optimal solution is found in adequate portfolio by tangency of return surface with surface utility function.



**Fig. 4.** The scheme of formation sets of portfolio efficient values (source: created by authors)

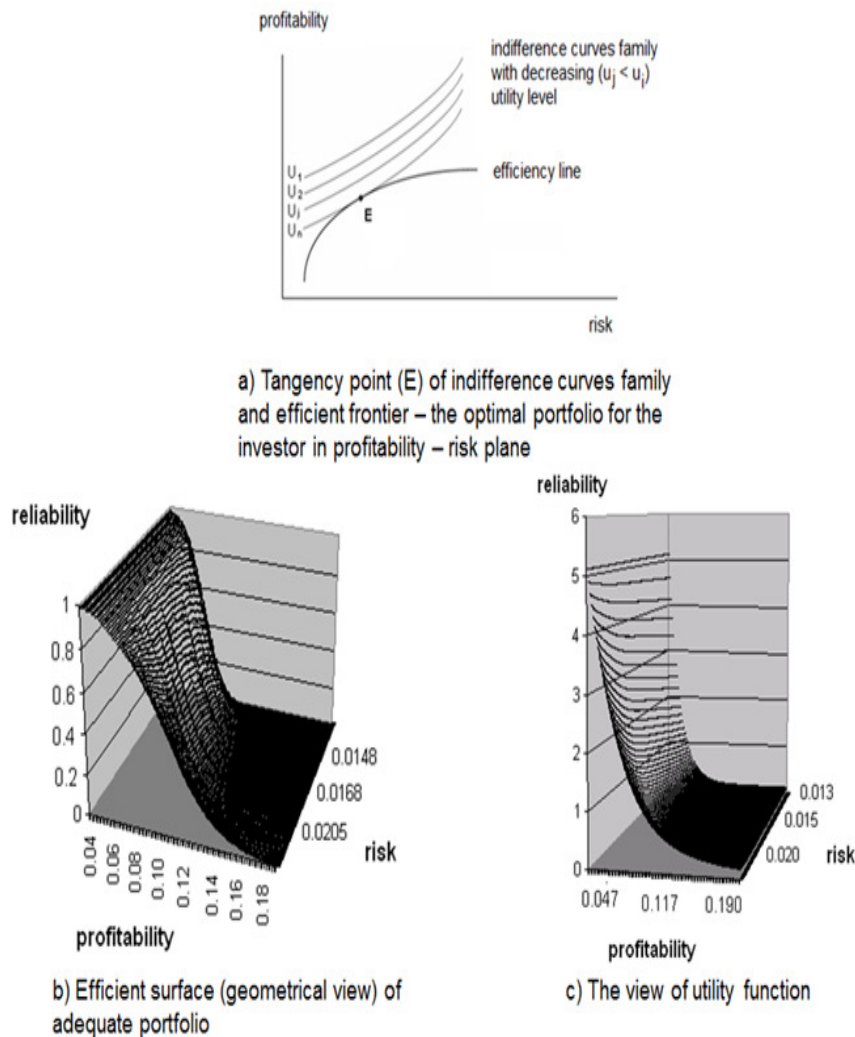


Fig. 5. The possibilities' surface of adequate portfolio and investor's utility function (source: compiled by the authors)

Thus, in Fig. 4 we can see that in case of Markowitz portfolio the optimal solution is defined by the average of return and riskiness, whereas in adequate portfolio – the size of return, reliability of return and riskiness of return. More precisely – it's a riskiness of return, defined by Markowitz random field as the riskiness of random size.

### 5. The utility function as the criteria for eligibility of decision in adequate portfolio

The selection of multicriteria feature and evaluation of opportunities practical applications are very important problems, which particularly receive strong emphasis on mathematics, mechanics and other 'quantitative' sciences. However, the attention should be paid to social sciences problems, where a large part of the factors examined only qualitatively and therefore direct analysis of multicriteria causes a lot of questions (Rutkauskas 2012).

In this work in order to explore and identify the opportunities, offered by the market for investors, the impact of globalization to financial markets was taken into account. It was based on our previous researches and found on the approach, that the rate of return stand on financial assets is possibilities probability distribution (Rutkauskas 2000; Rutkauskas 2006).

In order to effectively allocate available resources in financial markets, it is important to identify the opportunities offered by the markets, profitability and risk level – in this way will be selected markets, where investors, by taking the appropriate level of risk, will receive the complex of utility and reliability.

However, the authors try to get rid of the idea that risk is just bearer of disasters and risk management is a desire to avoid this. It is trying to activate the idea that risk taking means the searching for success and the risk can be focused only as bearer of success. In any case, we need to under-

stand that the risk is a substance of existence and the real phenomena illustrate its genetic power.

In this case, in order to achieve successful investment decisions, it should appeal to the survival function, which would allow evaluating each market offered opportunity by the size of possibility and guarantee of this size. This scheme will enable quicker, than with all other models and methods, review of market opportunities. The choice of useful options for entity is associated with equivalent recovery of utility function.

Whereas the utility is associated with efficiency, reliability and risk, it is possible to invoke the utility function:

$$U = \frac{f(e) \times f(p)}{f(r)}, \quad (1)$$

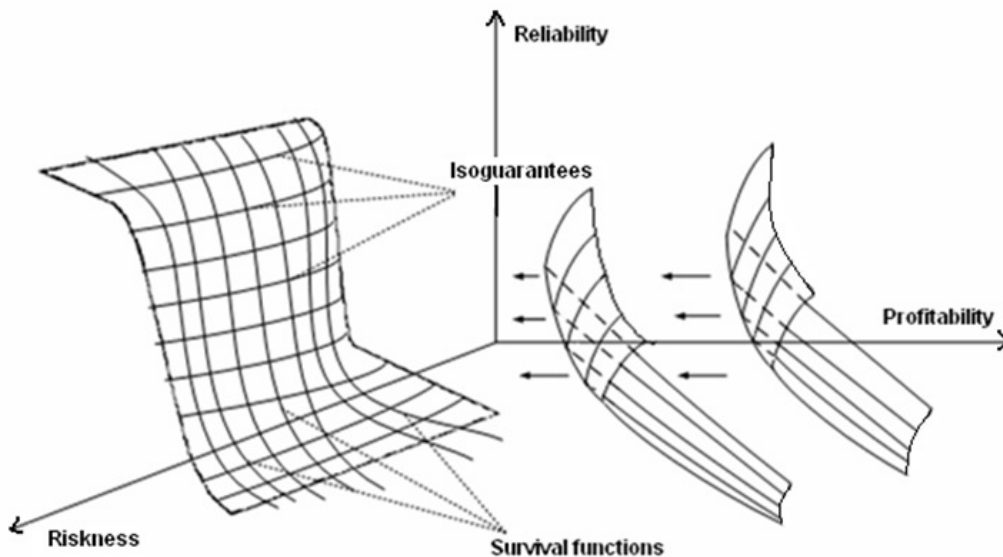
where  $f(e)$  – efficiency,  $f(p)$  – reliability,  $f(r)$  – risk.

Anatomy of investment portfolio possibilities and technique, how to find the highest efficiency possibilities of efficiency by (1) formula means are available in Fig. 6.

**6. Conclusions**

1. Anatomy of globalization is as the emerging knowledge about the nature of the globalization process, its structure and possible consequences to development of civilization in the earth and objectively changing process and subjectively generated processes with incompatibility moments, which challenges efforts

2. Globalization challenges civilization nurtured sustainable development canons and usually it becomes deposition of negative globalization’s consequences. As with globalization revelation of sustainable development, this becomes deposition of positive mission of globalization. Sustainable development of civilization as globalization, looking back at its variety of possibilities, is long-term process and sustainable development of civilization will depend on compatibility with globalization processes and also will depend on stochastic management capabilities.
3. Talking about development or sustainability, the concept of present is always analysed with future. Constructive present signal to the future is investment. Given that globalization of financial markets is the main highway of globalization to development of economy processes, globalized financial markets could become financial partners.
4. The hypothesis, which was raised by authors, was partly proved. There is no doubt, that preparation of investment generates sustainable return strategies is specific activity which requires relevant qualification and skills. Authors’ experimental search of these strategies lets us optimistically look at existence of such possibilities.



**Fig. 6.** The general view of three-dimensional efficient surface and respective utility functions (source: Rutkauskas *et al.* 2013)

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