Risk and Return – What have we missed?

Georgi Turlakov

Abstract

This study examines the relations between diversification, size and return of the active companies in the UK market. The literature on this topic provides contradictory findings with empirical result supporting two interchangeable hypotheses – positive or negative correlation between return and diversification as well as return and size. The report provide stable difference between the two classes in favour of the diversified firms. The analysis support the idea of significant positive relation between the factors with broad support from the literature.

Keywords: risk, return, size, diversification, CAPM (Capital Asset Pricing Model)

The study considers whether and how the return of a company relates to its size and structure. The idea of this paper is sown in the eventual possibility of updating CAPM and other models estimating the expected returns. This concept is not pioneering and the history knows other suggestions on increasing the accuracy of the models but is first of a kind conducting such empirical tests and discussing the problem in the UK perspective.

The concept of connecting the size of the company together with its structure on the market is touched by many authors. The backbone idea of the paper lies in the CAPM model and its accuracy. This approach is highly criticised recently (Dempsey, 2013; Hodgson, Linton and Vorkink, 2000) and its weaknesses are exposed. However, it is argued that the main problem of the model is the limited number of factors it uses in determination of the expected returns. This obstacle is the reason for the inaccuracy of the approach under given circumstances. The CAPM model is still the one used widely around the financial world but an upgraded version would improve its validity and convince its opponents in the benefits of the method. An observation of other models such as the three factor model is also needed as an alternative model.

In this sense, one of the approaches is to improve the accuracy of the widely used model including additional factors in the equation for the expected returns. These factors are argued to be the size effect of a firm on its performance and particularly its returns and the structure of the company. Size effect is a main topic discussed by many authors (Hou and Dijk, 2008, Djik, 2011, Pervan and Višić, 2012) and relates to the performance of the company directly. However, different opinions on the effect of the size on returns exist and the study explores the implications of this factor during crisis and post-crisis period.

Every company on the market aims to improve its performance and provide better results for the financial year. There are several different characteristics related to the development, future objectives and achievement of a firm. However, the most important one and the reason of the existing of an organisation is the return. Different models are known and used in order to describe the firm performance and results and relate it to its expectation for the future movements of returns. The most basic principle used for the aim of understanding the mechanics of a firm and connect its characteristics to its return is known as Capital Asset Pricing Model (Sharpe, 1964; Lintner, 1965). It gives a straight equation for the expectation of the returns according to its current performance indicators. The wide use of CAPM together with criticism about the model gives rise to this study’s main concept – improving the validity of the method by inclusion of two main factors influencing the performance – size and diversification.

The focus of this paper is in this sense to relate the diversification, size and return. The review of the literature gives controversial opinions on the implications of these factors on the firm and finds different balance of the costs and benefits from diversification and size expansion. Therefore, the sign of this association is examined under different angles and for periods related to high fluctuations in the UK market.

CAPM

CAPM model and its validity is widely reviewed and discussed in the literature. Since its inception (late 1960's) there exist many authors who criticise the accuracy of the model and others who support the approach. The CAPM model uses one simple formula for estimation of the expected return (E(Ri)) presented as:

$$E[Ri]= Rf + \beta i(E[Rm] - Rf) + \alpha$$

In this structure the return is calculated through the risk free rate (Rf), the beta of the market (βi), the expected return of the market (E(Rm)) and one term alpha (α) which stands for the error. The best evidence of the value of the CAPM model is its wide use across the industries, countries and markets. Brown and Walter (2013) show the validity of the model in different environments. Corporations use it in capital budgeting, regulatory agencies in price setting as well as academics in teaching Corporate Finance. There are various early attempts that prove the precision of its results to a certain extent. These opinions give a field to think of the CAPM as relatively accurate way of predicting the returns of a company (Mullins, 1982; Jagannathan and McGrattan, 1995). However, these studies reveal some imperfections of the model but confirm the usefulness of CAPM especially in the long run view.

Observations of more recent literature on the CAPM debate unambiguously expose the existence of wide range of opposers to the conventional approach – some of the arguments take results and facts which suggest a complete rejection of the formula while others present ideas for improving the model without radical change of its structure. Hodgson, Linton and Vorkink (2000) test the CAPM and its efficiency under elliptical symmetry which brings supportive findings but rejects its validity in general. According to their results the CAPM model is not consistent with stock returns even on daily basis in spite of the positive sign for its validity under the Gaussian method.

The observations through different markets and structures define a contradiction for the accuracy of CAPM. Fellow and Bhatti (2010) examine the validity of the model in Pakistani institutional framework on KSE (Karachi Stock Exchange) and also find strong evidences against the method. Only 28 results out of 360 tested observations show support for the accuracy of CAPM which causes misleading expectations for the investors using this approach. A recent work of Dempsey (2013) also denies the reliability and use of the CAPM. However, an alternative is to assume that investors expect the same return on all of the assets which is non-sense according to the specific distinctions of the industry characteristics and past fluctuations on the market. The idea that the assets will be considered with the same return independently on their risk is also inconsistent with the mechanics of the investor's engine which rely on the risk premium. Thus, the argument should not deny the CAPM model. Instead, it should work on its base and recreate it to achieve better quality of the results.

In this sense, the idea of this study is to examine whether size and diversification values influence the returns thus, should be taken into account in order to increase the precision of CAPM. The backbone of the research is based on the large arguments against the model during the recent years and post-crisis period. However, the aim is to adapt the CAPM method for the other factors and create a better estimation for the return. The new version of the model will provide more accuracy and will benefit the investors in estimating their returns. From the mathematical point of view this would have an implication on the alpha (α) term in the equation and minimising it will reduce the error of the model.

The Three-Factor Model

The basic idea of increasing the factors in the equation which estimates the expected return is followed in the creation of The Three-Factor Model. Fama and French suggest a method alternative to CAPM in order to estimate expected returns of an asset. Their approach takes the base of the CAPM but includes two additional factors. Fama and French observations show that two types of stocks tend to do better than the market namely small caps and high book to market ratio stocks. The equation for the three factor model is:

$$r = Rf + \beta(E[Rm] - Rf) + bs*SMB + bv*HML + \alpha$$

The additional factors represent the small minus big (SMB) market capitalisation and high minus low (HML) book to market ratio. The bs and bv terms are coefficients. Thus, Fama and French measure the historic excess returns of small over big caps as well as value over growth stocks. Their model shows validity across Europe which supports the idea of increased accuracy with bigger amount of factors in the equation. Bhatnagar and Ramlogan (2006) provide a study conducted to oppose the Three Factor Model to the CAPM looking through the United Kingdom perspective. The study lies on the methodology of the framework of Fama and French (2006) in comparing a split sample CAPM performance to the Three Factor Model. The results show that the application of the CAPM under the United Kingdom conditions was not accurate enough.

On the other hand, the Three Factor Model holds for this particular market and is more applicable in order to explain the stock returns and the premium effects. This line of observation is also followed by Lajili (2002) exploring the Fama and French model into the environment of the French Stock Market. The tested set of market portfolios gives results in favour of The Three-Factor Model. Fama and French method captures all the variations during a considerable period of 300 months for a sample of 274 stocks. Lajili manages to build stable backbone of the conclusions in the paper testing the dependence of his findings on the choice of particular portfolio. For that purpose six market portfolios are considered (namely the equal-weight returns of the stocks, the value-weight returns of the stocks and indices CAC40, SBF80, SBF120 and SBF250) and the different types and particular examples explain common variation in the returns using The Three-Factor Model. This accurate sample gives a bright look over the validity of the method on the French Stock Markets and in this sense supports heavily the need of additional factors to those used in the CAPM model.

Lam (2005) conducts a study providing a direct comparison for better accuracy between the Three-Factor Model and CAPM. The paper does not limit the data over a particular country but creates the sample as wide as possible in order to derive reliable conclusions. The findings of the study do not render support to any of the methods. In fact, the Fama and French approach is examined to be better for the 25 portfolios tested but CAPM returns more accurate results across the 30 industries. In this sense, the relatively complete sample used by Lam reflects the limitations of the Three Factor Model such as the dependence on the particular test or the specific period examined. The method returns proper results only under time series average absolute pricing errors test and for the period 1963-2004 but not 1926-2004.

The findings of the above authors give questionable conclusions about the accuracy of each approach but clearly distinguish between the methods. The CAPM model is widely used but at the same time criticised while the Fama and French method clearly has benefits under given conditions but after an appropriate sample tests considerable limitations arise. This renders support to this study’s main idea and purpose which would bring additional factors compared to the formulae that CAPM uses but would hopefully overcome the limitations of the Three-Factor Model. The wide use of CAPM and its derivative in the face of the Fama and French method confirms that the Sharpe, Lintner model is the best base for developing an improved algorithm. In this sense, the key for conducting the most accurate approach for estimating the expected returns would be the choice of the right factors that would impact the market movements and the particular company behaviour in order to give the appropriate results. This algorithm would also include an error term (α) but the attempt would aim for minimising the alpha.

The Size effect

Although the size of a firm and its effect on the overall performance is examined by a great number of studies and there exist various theories that include the size factor, this issue continues to be investigated under different circumstances in order to derive its full impact on company success and profitability. In the early 1980’s, Banz shows that there is an occurrence of the size effect when it comes to estimating the return of a company. He argues that the size effect comes in the sense that

smaller firms achieve higher risk-adjusted returns, compared to larger companies. However, his suggestion is proven to be accurate only for the US companies in the period before 1980’s.

Size and profit

The disappearance of the size effect is also examined by Dijk (2011). His efforts provide support to the thesis that the contribution of the size to the returns is significant and any conclusion of disappearance would be premature. This effect controls some key variables and should be part of the equation for estimating the return. In this sense, the size can be evaluated by different variables for each company and control this estimate when present expectation for future returns or firm performance as a whole.

Hou and Dijk (2008) also examine the size effect in relation to the model presented by Banz. They found that the fluctuations that appeared are due to the unexpected shocks to the profitability of the large and small firms after the 1980’s. This idea brings the size effect back in the equation but with opposite sign because of the unusual conditions of the market. Therefore, the shocks contribute to huge negative impact on the profitability of the small firms and high positive influence on the returns of the large companies on the market. Again Hou and Dijk (2010) investigate further the discrepancy between the expected and actual returns on the market after 1980’s and conclude that a robust size effect still exist.

A recent study conducted by Pervan and Višić (2012) focuses on the size – profit correlation examining the firm’s performance on the creation market. Their findings confirm the idea of positive connection between the size and business success as a whole proven by simple correlation model. So the influence of the size on the return is widely examined and proven to some extent. This relation can be included in the calculations of the returns by the CAPM which on other hand reduces the error (alpha) term in the equation. Therefore, the prediction can be improved which make the model more precise and accurate for estimating the expected return figure.

An earlier view of the size effect gives some other aspect of its implications on the company performance. Liu (1995) examines the extent to which the size of a firm would have impact on the perspectives of the given company. For this purpose the differences in the level of market orientation is examined. The market orientation factor refers to the idea of market intelligence, decision making, strategic perspective and customer orientation. This provides further justification of the significance of the size effect for the company overall performance. However, the importance of the size and its effect on the company is widely seen in different studies and models used for estimation of the returns expected and forecasting the performance. Having this in mind, the focus is put on the diversification and its impact on these factors. This allows to correlate both variables to the returns in the past testing the validity of the idea and on this base to include the diversification and size in the future expectation calculations.

Diversification

The study focuses on the other variable namely the structure of the company which is examined in order to recognise relation to returns. It is suggested that an accurate estimation of this structure would also be helpful in order to update the CAPM model and bring it to another more precise level. There are various approximations for the structure of a company and related to its overall performance such as equity structure **(**Xiaoyue and Xiaodong, 2001**)**, capital structure (Salim and Yadav, 2012) or even board committee structure (Klein, 1998). However, the aim of this research is to examine the firm structure that would have direct impact on the company performance over the long run and determine it in order to update the CAPM formula. The problem is to relate the structure on the market to some variable which gives the best approximation and therefore achieve a maximum correlation in order to include this estimation in the CAPM model. The best sign of the global firm structure and specific characteristic would be the diversification of the company. This relates to the idea of the market orientation level together with development of the company and its adaptability in different environments. The definition of the diversification is given as “a corporate strategy to increase sales volume from new products and new markets. Diversification can be expanded into a

new segment of an industry that the business is already in, or investing in a promising business outside of the scope of the existing business”. In this sense, the level of diversification would have a direct extent to the level of growth and progress which are a factor of the company structure.

Types of diversification

Different determinants of diversification are recognised in various backgrounds which leads to different types of diversification defined in the past (Qian, 1997). The variation in the interpretation and the meaning of the diversification for the company requires strict determination of the types recognised and examined through the study. In this sense, two basic types of diversification are recognised: product and international. Each of the types is related to different characteristic of each company but both imply the level of diversification that the firm reaches.

The international diversification relates to the idea of increasing the amount of countries a firm operates in, the number of offices, foreign assets and foreign sales. The benefit of this type of diversification comes from the additional markets available. If a firm operates internationally it reaches another level of possible growth because of the wider market opportunities compared to a purely domestic company which leads to sustainability and risk reduction. The paper focuses on testing this type of diversification of the companies in the whole market using their indices for international sales. This index gives direct relation to the international diversification level of a company and brings bright evidence for eventual association with the returns of the firm.

The product diversification as it name suggests measures the amount or the variety of products or services offered by a particular company. A well diversified firm according to its products would imply some benefits and sustainability in the future. For example a UK top retail company such as Arnold Clark offers both used and new cars for sale. In the case of financial collapse, there are reductions in the overall wealth which implies a decrease in the sales of new cars. On the other hand, the sales of used cars would increase because of the reduced budget and the comprehensiveness of the products that Arnold Clark offers would keep the firm returns stable. This type of diversification can also be divided to related and unrelated according to the nature of its product. The related diversification refers to the situation when firms diversify within industry while the unrelated diversification is where companies diversify across industries. However, due to the purpose of this study, the overall product diversification is tested based on the segments that each company contains irrespective of the nature of its products.

The economic benefits of the diversification

An important benefit for the large organisations on the market comes from privileges called economy of scale, economy of scope and learning in the sense of knowledge capacity. The definition of the economy of scale is given as “the cost advantages that enterprises obtain due to size, throughput, or scale of operation, with cost per unit of output generally decreasing with increasing scale as fixed costs are spread out over more units of output. This is due to lower transaction costs for larger purchases of securities. Often operational efficiency is also greater with increasing scale, leading to lower variable cost as well”. This idea refers to the reduction of firm costs especially the fixed costs when having greater amounts of products or outputs. For example, a product diversified and non-diversified company might have exactly the same amount of fixed costs but the cost per unit figure depends on their production. In this sense, the non-diversified company has more costs per unit of output while “assembly line” structure of the product diversified organisation implies benefits for the fixed costs reduction. Learning also plays an important role when it comes to domestic-international company contrast. A multinational firm that operates on different types of markets – from emerging to developed. This suggests more opportunity from learning, better experience in different fields and environments and greater knowledge capacity for the international compared to domestic companies.

The other vital benefit for the multinational firms comes from the so called economies of scope. Referring to the definition, economies of scope is determined as “An economic theory stating that the average total cost of production decreases as a result of increasing the number of different

goods produced”. Here, the advantage comes not from increasing the amount of units produced but expanding the number of types of products or services offered which is a direct implication for product diversification. For example, any firm would benefit from providing more services on the same place than offering just one. This relates to advantages such as shared storage, common facilities and devices and so forth during production or preparation process.

A stochastic frontier analysis is derived by Symeou (2010) in order to obtain economic measures of firm deviations which on other hand are regressed on company size to achieve a proper examination of the performance on the base of growth constraints. That paper provides a different angle to view the size issue. The important conclusion is that small firms have different growth potential depending on their economy and industry. In this sense, the idea of economy size related to the specific company size follows. A large economy will provide more potential for future growth of any of its firm while the small economy has various limitations to the future development of its companies. These can be human capital, weaker demand or lower attractiveness for additional private investors. On the other hand, large economy would have different negative implications to the growth potential of the firm. The complexity of the body of such company together with the agency problem can reduce the opportunities for further development. Thus, the drawbacks of the diversification need to be carefully examined. In this way, a full picture of the implications of company characteristics can be evaluated and then the firm profitability expectations can be drawn.

Disadvantages of the diversification

Stiroh and Rumble (2005) on the other hand focus on the dark side of the diversification in the sense of the increased products offered in the US financial holding companies. They underline the costs related to the raised exposure to volatile activities and conclude that these expenses offset the benefits from diversification. Therefore, the diversification reduces the value of the firm and cannot bring enough additional returns which make it non-profitable investment from company point of view.

Fauver et. al. (2004) also question the benefits of the diversification in the UK and US market. Moreover, the findings suggest that the industrial diversification reduces the firm value in the US and the UK. The international diversification is also proved not to bring additional returns for the UK companies. In this sense, the diversification is related to some limitations which support the idea of controlling its value in particular interval. However, these results create an additional hypothesis that suggests negative impact from the diversification. The contrast findings provide a robust motivation for the diversification to be carefully tested and evaluated for the future estimation of the firm value or expected returns. The problem of the great importance here is whether the diversification level has any positive implication to the performance and in this sense the profit figures of a company. The literature suggests different conclusions which contribute the colourful impact that diversification have on the firm.

US results

The diversification in US as a well developed and structured market is examined and compared to the situation in UK. For this purpose the paper needs to extract the drivers and main motivations behind the development of the international diversification in its origination and the high level of multinationality of the US companies.

There exist different studies connecting the diversification level to company performance as a whole. The international diversification in the US manufacturing companies is relatively high and provides constant increase (Gollop and Monahan, 1991). This determines some other factors in the company structure and in this sense its returns. Sambharya (1996) relates the international diversification level of a US company to the foreign experience of the top management team. Therefore, higher proportion of international experienced managers results in stronger international presence of a given firm. Moreover, the roots of the diversification and its level for each company are attributed to the experience of the top management team.

Qian (2002) confirms the relation between diversification, both product and international, and profitability in the US small- and medium- sized companies. However, a firm in the US market also has limitations for its eventual benefits from the increased diversification – the relationship to the

returns is curvilinear. This suggests that at some point further increase in the multinationality and product diversification would be associated with declining performance and profitability. Therefore, the idea of a beneficial complex diversification operating at optimal level is implied.

The diversification index for a given country is determined by the potential benefits that a company operating on domestic level would gain from eventual expanding in a foreign market. From this point of view US diversification is seen to be high according to the potential for substantial increase in the return as an outcome from investing internationally (Eun and Resnick, 1991). Then constant development in the US economy is created towards an international direction which is a main reason for improving the risk-return relation.

UK results

On the other hand, UK diversification is mainly driven by the industry specifications. Gourlay and Seaton (2004) find that the index of diversification in the UK quoted firms depends on the company-level heterogeneity and industry characteristics. The heterogeneity of a firm refers directly to one of the main types of the diversification namely product diversification. Moreover, they find that industry specifications, given as a determinant of the variability of the diversification in a firm, would provide substantial differences for the companies on the market according to their main services or products offered. However, the paper examines the whole market in order to come to more global conclusion for the diversification because isolating the tests to some particular sector creates different limitations of development according to the industry specifics.

An early observation over the diversification in UK companies underlines its impact and determines it as a main factor for the firm performance tested by the growth of productivity and output, the share of world trade obtained, ability to export, and the creation of employment (Constable, 1986). The diversification in these years (1966-1986) in the UK industry was created mainly by acquisitions and not by expanding the internal product segments. However, the sustainable companies owe their success on the diversification level achieved by controlling considerable amount of subsidiaries.

UK real estate and property companies represent a bright example of the benefits of the diversification within a portfolio (Byrne and Lee, 2003; Adair, McGreal and Webb, 2006). The significant positive correlation between size and diversification brings the idea of positive implications of the size to the overall risk. The usual idea of the increased size leading to greater risk is examined from the diversification point of view. In this sense, some specific risk reductions can be implied by the increased diversification as an inevitable part of the size expansion. Another part of the UK industry, namely the freight forwarder companies, also supports the main idea of gaining returns from controlling the diversification factor (Markides and Holweg, 2006). The diversification is again correlated to the company size and the main incentive that higher profit margins can be achieved by expanding outside the traditional core of the business. This motivation can be applied to both directions of the diversification – international and product/service.

Diversification and profit

The indirect impact of the diversification on the firm performance gives the clue needed to relate the company structure to its diversification level. Ansoff (1957) also determines the diversification as one of the main growth strategies in the late 1950s which points its connection to the ability to adapt new techniques, innovative approaches and new products and markets. Therefore, the diversification put in the CAPM equation gives more transparency over the expectations and reduces the error term in the formula updating its accuracy for the actual returns.

An early examination by Hamilton and Shergill (1993) reveals a strategy-performance relation in the sense that moderate and well diversified companies achieve better results compared to non-diversified ones (New Zealand example). Their study helps to support the hypothesis which correlates positively the diversification level of a company to its overall performance and more specifically to its return. Another review of the diversification and its relation to company development is presented by Beamish and daCosta (1989). Their paper illustrates the high extent that diversification has but this time among the 100 largest multinational companies in Europe. An important issue is the atmosphere

in which the estimates are put in such as the time period and the specific industry examined. Most of the studies on the topic of diversification-performance or innovation-performance issue are conducted over data taken from manufacturing sector (Narasimhan and Kim, 2002; Laursen and Salter, 2005) and some others examine emerging markets environment (Gaur and Kumar, 2010; Li and Wong, 2003). However, this paper aims to provide tests and recognise trends over the whole UK market including the service companies in order to achieve considerable accuracy and opportunity for more global conclusion

The main idea around the benefits of diversification similar to the privileges of the big over the small firm ground on the theoretical assumption that multinational companies exploit advantages such as economies of scope, economies of scale and learning. Capar and Kotabe (2003) provide a test of this correlation for a data of 81 major service companies in Germany. The conclusion suggests a U-shape curve for the returns and overall results of the well diversified companies in Germany. The study tests further this relationship for multinational firms in UK which provides additional details and thoughts about a more global conclusion on the topic. A company in the service industry is a group that provides to some extent an intangible item which also requires interaction between the seller and the buyer (Berthon et al., 1999). The large expansion of this sector during the recent years and particularly in UK gives a field to examine the engine of the service companies in great detail through including those companies in the tests. This paper’s interest falls mainly on the structure related performance and expectations for future returns for each firm in the sample. The relatively large amount of companies in the industry gives the availability to look through small, moderate and big companies from the spectrum of their structure and multiculturalism. The main trading unit of the service sector is intangible which leads the idea of the vital importance of client relations, market positions, innovations and spreading over the different types of economics and cultures.

The idea of diversification is also commented by Contractor, Kundu and Hsu (2003) in the spectrum of the level of multinationality of each company. They measure the link between the international expansion and performance in the service sector. This leads to an extension of the idea that company structure and particularly its comprehensiveness determines the returns. The findings support the main well established idea of a positive impact on the performance from the multinationalisation but confirm the inverted U-shaped curve for the returns of the company. Moreover, the study creates the idea of a determined beneficial range for the level of multinationality. The initial costs involved contribute to the U-shaped returns and the illustration of some examples of “over-internationalize” by over-expansion of the business into too many nations make the curve inverted.

The review starts by examining the mechanics of the models used to estimate expected returns such as CAPM and Fama-French three-factor model in order to test whether they are influenced by diversification and size. The literature on the relation between size, diversification and returns suggest some association between the variables. Most of the studies recognise positive correlation and support the idea of direct implications of the diversification and size on the company performance. However, some authors find cases where these implications come with negative sign and the costs related with overexpansion vanish the benefits. Examining the UK and US case we observe similar findings for the influence of the variables. In this sense, based on the review of the literature two alternatives are built. The study’s main hypothesis suggests that diversification and size correlate positively to returns and in this case firm performance. The other alternative states that the same variables relate negatively to returns and so reduce the value of the firm.

Bibliography:

1. Adair A., McGreal S., Webb J. “Diversification Effects of Direct versus Indirect Real Estate Investments in the U.K.”, Journal of Real Estate Portfolio Management, Volume 12, Number 9 / 2006

2. Banz R. “The relationship between return and market value of common stocks”, Journal of Fmanctal Economtcs 9 (1981) 3318, North-Holland Pubhshmg Company
3. Berthon P. and Katsikeas L. ‘Virtual services go international: international services in the marketplace’, Journal of International Marketing 7(3): 84–105, 1999
4. Bhatnagar C. and Ramlogan R. “The Capital Asset Pricing Model versus The Three Factor Model: A United Kingdom Perspective”, International Journal of Business and Social Research (IJBSR), Volume 2, No.1, 2012
5. Brown P. and Walter T. “The CAPM: Theoretical Validity”, Empirical Intractability and Practical Applications Vol. 49, 2013
6. Byrne P. and Lee S. “An exploration of the relationship between size, diversification and risk in UK real estate portfolios: 1989-1999”, Journal of Property Research, Volume 20, Issue 2, 2003
7. Capar N. and Kotabe M. “The relationship between international diversification and performance in service firms”, Journal of International Business Studies 34, 345–355, 2003
8. Constable J. “Diversification as a factor in U.K. industrial strategy”, Long Range Planning Volume 19, Issue 1, February 1986, 52–60
9. Contractor F., Kundu S., Hsu C. “A three-stage theory of international expansion: the link between multinationality and performance in the service sector”, Journal of International Business Studies 34, 5–18, 2003
10. Costa R., Geringer M. and Beamish P. “Diversification strategy and internationalization: implications for MNE /- Performance”, Strategic Management Journal, Vol. 10, 109-1 19, 1989
11. Dempsey M. “The Capital Asset Pricing Model (CAPM):The History of a Failed Revolutionary Idea in Finance?”, Volume 49, Issue Supplement S1, 7–23, January 2013
12. Dijk M. “Is size dead? A review of the size effect in equity returns”, Journal of Banking & Finance 35, 3263–3274, 2011
13. Eun C. and Resnick B. “International diversification of inverment portfolios: U.S. and Japanese perspectives” School of Business Discussion Papers, Paper 67, 1991
14. Fauver L., Houston J. and Naranjo A. “Cross-country evidence on the value of corporate industrial and international diversification”, Journal of Corporate Finance, Volume 10, Issue 5, November 2004, 729–752
15. Fellow M. and Bhatti U. “Validity of Capital Assets Pricing Model: Evidence from KSE-Pakistan”, European Journal of Economics, Finance and Administrative Sciences, No. 20, 2010
16. Gaur A. and Kumar V. “International Diversification, Business Group Affiliation and Firm Performance: Empirical Evidence from India”, British Journal of Management, Vol. 20, 172–186, 2009
17. Gollop F. and Monahan J. “A generalized index of diversification: trends in U.S. manufacturing”, Review of Economics & Statistics, Volume (Year): 1993, Issue (Month): 2 (May), 318-30
18. Gourlay A. and Seaton J. “The determinants of firm diversification in UK quoted companies”, Applied Economics, Volume 36, Issue 18, 2004
19. Hamilton R. and Shergill G. “Extent of Diversification and Company Performance: the New Zealand Evidence”, Managerial and decision economics, Vol.14, 1993, 47-52
20. Hou K. and Dijk M. “Resurrecting the Size Effect: Firm Size, Profitability Shocks, and Expected Stock Returns”, Working Paper Series, 2008
21. Hou K. and Dijk M. “Profitability shocks and the size effect in the cross-section of expected stock returns”, Working Paper Series, 2010
22. Jagannathan R. and McGrattan E. “The CAPM Debate”, Federal Reserve Bank of Minneapolis Quarterly Review Fall 1995

23. Klein A. “Firm performance and board committee structure”, Journal of Law and Economics, Vol. 41, Pages 275-294, 1998
24. Lajili S. “The Capital Asset Pricing Model and the Three Factor Model of Fama and French revisited in the case of France”, Cahier de recherche CEREG (DRM), 2002
25. Lam K. “Is the Fama-French Three-Factor Model better than CAPM”, Working Paper, Simon Fraser University, 2005
26. Laursen K. and Salter A. “Open for innovation: the role of openness in explaining innovation performance among U.K. manufacturing firms”, Strategic Management Journal, 27: 131–150, 2006
27. Li M. and Wong Y. “Diversification and Economic Performance: An Empirical Assessment of Chinese Firms”, Asia Pacific Journal of Management, Vol. 20, 243-265, 2003
28. Liu H. "Market orientation and firm size: an empirical examination in UK firms", European Journal of Marketing, Vol. 29 Iss: 1, 57 – 71, 1995
29. Markides V. and Holweg M. "On the diversification of international freight forwarders: A UK perspective", International Journal of Physical Distribution & Logistics Management, Vol. 36 Iss: 5, pp.336 – 359, 2006
30. Mullins D. Jr “Does the Capital Asset Pricing Model work?” The Magazine, 1982
31. Narasimhan R., Kim S. “Effect of supply chain integration on the relationship between diversification and performance: evidence from Japanese and Korean firms”, Journal of Operations Management 20, 303–323, 2002
32. Pervan M. and Višić J. “Influence of firm size on its business success” Croatian Operational Research Review (CRORR), Vol. 3, 213-221, 2012
33. Qian G. “Assessing Product-market Diversification of U.S. Firm”, Management International Review, vol. 37, 1997/2, 127-149
34. Qian G. “Multinationality, product diversification, and profitability of emerging US small- and medium-sized enterprises”, Journal of Business Venturing Volume 17, Issue 6, 1 October 2002, 611–633
35. Salim M. and Yadav R. “Capital Structure and Firm Performance: Evidence from Malaysian Listed Companies”, International Congress on Interdisciplinary Business and Social Sciences, Volume 65, 156-166, 2012
36. Sambharya M. “Foreign Experience of top management teams and international diversification strategies of U.S. multinational corporations”, Strategic Management Journal, Vol. 17, 739-746, 1996
37. Stiroh K. and Rumble A. “The dark side of diversification: The case of US financial holding companies”, Journal of Banking & Finance 30 (2006) 2131–2161
38. Xiaoyue C. and Xiaodong X. “Equity Structure,Firm Performance and the Protection for Investers' Interest”, Working Paper Series, 2001

For contacts:
Georgi Turlakov
Humboldt University of Berlin
E-mail: gyturlakov@gmail.com