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EFFICIENCY OF CORPORATE INTERNATIONAL DIVERISIFICATION: EVIDENCE FROM DEVELOPING COUNTRIES

Abstract

During the last two decades corporate international diversification became a widely used growth strategy. However, the majority of scientific researches insist on its value-destroying pattern. Those of them which were based on accounting studies' methodology and used current performance measures are likely to make an incomplete evaluation of corporate performance by accounting either for operating performance or financial (cost of capital) effects of internationalization. The current paper proposes a new approach for estimation of internalization-performance relationship which is based on economic profit concept. It allows to control simultaneously both operating and financial effects of internationalization on the firms' current performance. The proposed model has been empirically tested on a sample of large companies from one of emerging economies - Russia. The results identify a non-linear U-shape relationship between a degree of internationalization and companies' residual income (economic profit). The relationship is mainly determined by operating performance effects on economic profit while cost of capital has a modest effect. Overall for the majority of companies international diversification refers to decrease in economic profit. The results are compared against the Q-Tobin measure which incorporates expectations about future performance. A joint analysis of current performance (economic profit) and long-term performance (Q-Tobin) allows to expect the internationalization benefits to be realized in future. As an implication of the present research for corporate decision makers it may be stated that at the initial level of international diversification the internationalization decisions should be made with a high degree of caution. There should be a clear internationalization strategy based on definite mechanisms of performance improvement. The prestige and other irrational motives which may lead to the value destruction should be pruned.

Keywords

Corporate international diversification, Corporate performance, Internationalization, Multinational corporations, Residual income

1. Introduction

During the last two decades the level of corporate international diversification (CID) has been significantly growing. As an example in 2003–2006 a number of cross-border M&A deals grew by 40% per annum in manufacturing industries of some of European countries (Coeurdacier et al., 2009). In recent years the companies from emerging markets have also enhanced internationalization strategies, e.g. in China outbound M&A activities have doubled in terms of annual number of deals and increased five times in terms of value in period from 2002 to 2005 (Tan and Ai, 2010). In year 2000–2007 an average growth rate of

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outbound foreign direct investments of Russian companies was about 40% per annum (Plotnikov, 2010).

According to the majority of researches on performance of cross-border diversification the companies get into the internationalization paradox - the scholars demonstrate that the internationalization activities are mainly value-destroying.

Under corporate international diversification (CID) we mean an intensification of international activity of a company in terms of either exporting the products to foreign markets or employing resourced and allocating production units abroad or both. Following Hitt et al. (2006) the terms international diversification, cross-border diversification and internationalization are used in the paper as synonyms.

In fact most part of the researches which are based on accounting studies' methodology use operating performance measures (such as operating profit margin, return on assets or return on equity) and are missing the financial-side effects which are mainly resulted in the change of the cost of capital. These financial effects are mostly related to change in overall level of risks, access to integrated (global) capital markets, tax optimization and change in capital structure (Singh Manohar and Najadmalayeri Ali, 2004). Thus a neglect of these financial effects may lead to an incomplete evaluation of current performance[3] of internationalization. Both financial and operational effects should be analysed in order to fix the impact of internationalization on current performance. Meanwhile the current performance of internationalization may not represent its' long-term performance. Thus the current performance of internationalization should be compared to long-term measures such as Q-Tobin or market multiples which incorporate market expectations on future performance of a firm.

This paper contributes to the existing literature by developing a new approach for evaluation of internationalization-performance relationship which is based on a concept of economic profit (residual income). The method allows us to control both operating and financial effects of internationalization. Our second contribution is derived from the application of our original model to empirical identification of internationalization-performance relationship of the firms from the emerging capital markets, mainly Russian companies, which still remained unexplored as compared to the developed markets.

The paper is structured as follows: in the next section the theoretical background is summarized on the basis of existing researches and the hypotheses are formulated. The data and the methods are explained in section three. In section four we discuss the empirical results. Finally, the overall conclusions and policy implications are presented.

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[3] Under current performance we mean the results of a firm in a particular time period, for example for a particular year

2. Theoretical background and hypotheses

2.2. Research approach

The internationalization-performance relationship is typically studied in two paradigms[4]: event studies and accounting studies. While the first is based on the analysis of corporate performance change within a time window around a cross-border M&A deal, the second approach is based on identification of relationship between corporate performance (typically accounting-based measures) and a degree of internationalization of business (DOI). One may find a thorough review of research literature of both event-based and accounting-based internationalization studies in the papers of Bruener (2004) or Hitt et al. (2006).

The current research is based on the approach of regression analysis of influence of degree of internationalization on corporate performance measures. The existing researches differ a lot by the use of both performance indicators and measures of degree of internationalization:

- depending on the choice of measure of DOI it is possible to control different internationalization patterns. Usually international diversification is classified into two classes – diversification of assets and diversification of markets. The most commonly used measures of these types of CID are foreign-assets-to-total-assets (FATA) and foreign-sales-to-total-sales (FSTS) ratios correspondently. In opposite to event-studies approach the use of FATA measure allows to analyze not only non-organic foreign growth (cross-border M&As) but also foreign greenfield investments;
- a use of different corporate performance indicators also allows to study different types of effects of internationalization in different time horizons. Typically researches use the following two types of corporate performance measures:
    1) The first group of measures represents the current corporate performance during a particular period of time (usually 1 year) but does not incorporate expectations of potential efficiency changes in the future (usually benefits from internationalization are fully realized in the period of several years). The group of these measures consists of operational (revenue, operating cash flow, EBIT-based measures (EBIT margin, ROS, ROE, ROA, etc.), others) and financial performance measures (WACC and other cost-of-capital related measures) which are studied separately. The following papers represent this class of studies: Qian and Li (2002), Guler et al. (2003), Moeller and Schlingemann (2004), Lu and Beamish (2004), Contractor et al. (2007), Bobillo et al. (2010), Rugman and Chang (2010), Singh and Nejadmalayeri (2004), Joliet and Hubner (2006);
    2) The second group of measures incorporates expectations of the future corporate performance by combining accounting measures with market-based metrics in different multiples (Tobin's Q, PE, market-to-book ratio, others; see Bodnar et al. (2003), Chang and Wang (2007), Rugman and Chang (2010)).

The weakness of the first group of measures is that they do not simultaneously count for operational and financial efficiency effects of internationalization. In fact the change in operational efficiency measures should be compared to the change in opportunity costs

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[4] There exists the third paradigm of case studies analysis, but it remains a rather niche study-field.

measured by the change in the cost of capital. This paper proposes a new approach for solving the problem of a simultaneous analysis of operational and financial efficiency change related to corporate international diversification. The current model is based on the economic profit concept. Since economic profit comprises the cost of capital, which represents the risks associated with a firm and its internationalization decisions, it is an appropriate measure of **strategic performance** of a firm. The economic profit or residual income is measured as follows:

$$RI_{it} = (ROCE_{it} - WACC_{it}) \cdot CE_{it} \qquad (1)$$

where *RI* is the measure of economic profit of company *i* in period *t*, *ROCE* – return on capital employed, *WACC* - weighted average cost of capital, *CE* – amount of capital employed.

As an economic profit measure for estimation of internationalization-performance relationship the ratio of residual income to capital employed may be used. Thus, both ROCE and WACC as functions of the degree of internationalization and other control variables should be estimated.

2.2. Hypotheses

Based on existing studies as well as our analysis of internationalization processes in Russia we have formulated several research hypotheses for a sample of Russian companies.

2.2.1. Hypotheses for ROCE-DOI relationship

The majority of internationalization-performance researches state for a non-linear pattern of relationship between DOI and operational efficiency measures. Lu and Beamish (2004) identified the most general pattern of this relationship demonstrated by horizontal S-shape curve which was also supported by Bobillo et al. (2010), Rugman and Chang (2010). The S-shape curve consists of 3 sequential intervals:
1) at a low level of international diversification the operating performance is decreasing with an increase in DOI since internationalization-related costs (learning costs, cost of coordination and control of abroad divisions, other transaction costs) are too high in comparison with a low marginal increase in efficiency and growth of abroad sales;
2) at a medium level of internationalization the performance is supposed to increase due to significant benefits (economy of scale and scope, diversification of country risks, access to foreign knowledge and cheaper resources, increase of market power, etc.) which are higher than transaction costs;
3) at a high level of DOI the performance may start descending again due to the unmanageable international complexity of organizations (over-internationalization stage).

For the developed countries the most typical result of estimation of the relationship is a horizontal S-shape curve, but there are some studies which also identify a U-shape curve[5]

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[5] For instance see Capar and Kotabe (2003), Ruigrok and Wagner (2003).

(which represents only the first and the second stages of the S-shape curve) and an inverted U-shape curve[6] (which represents only the second and the third stages of the S-shape curve). For the emerging markets (India) a U-shaped relationship has been identified by Contractor et al. (2007). It is presumed that the companies from the emerging markets typically do not reach such degree of complexity related to an over-internationalization stage when further internationalization becomes value destroying.

Hypothesis 1.1: The relationship between ROCE and DOI is non-linear and follows an U-shape pattern for Russian companies

2.2.2. Hypotheses for WACC-DOI relationship

Singh and Nejadmalayeri (2004) have identified an increase of liabilities in capital structure related to corporate internationalization. The fact is motivated by a corresponding increase of debt supply on capital market which is driven by diminishing bankruptcy risks of internationalizing firms due to overall risk diversification. But conversely there exist other studies that state for a downturn in debt supply related to corporate internationalization due to the following factors (see e.g. Doukas and Pantzalis, 2003):

a) typically internationalization is associated with higher growth rates and a growing complexity of organizational design of a business both of which increase agency costs of debt holders;

b) amount of intangible assets are likely to increase with international diversification of business which implied additional risks to debtholders as these assets cannot be monetized in case of bankruptcy.

Since there is no theoretical base for hypothesizing a prevailing of one effect above another as a hull hypothesis we assume that the effects compensate each other and capital structure is not supposed to change due to internationalization.

Hypothesis 2.1: A combination of debt and equity in capital structure does not depend on DOI for a sample of Russian companies.

Corporate international diversification influences cost of equity through the following three factors:

a) change in level of risks: there may exist a non-linear relationship between DOI and level of risks to shareholders due to an addition of new internationalization-specific risks on initial stage of international diversification, meanwhile on a later stages of CID one could expect a decrease of shareholders' risks due to their diversification;

b) rise of shareholders' agency costs: it is supposed that with growth of DOI the costs of monitoring and controlling company's management also increase;

c) change in capital structure: different levers are described in above in paragraph related to Hypotheses 2.1.

Singh and Nejadmalayeri (2004) state for a higher risk price for shareholder determined by beta coefficient for MNCs.

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[6] For instance see Hitt et al. (1997).

Hypothesis 2.2: Cost of equity increase with international diversification. There may exist a non-linear relationship of U-shape form between cost of equity and DOI for a sample of internationalized Russian companies

The most significant debt-specific factors are as follows:
  a) change in debt maturity: as it was identified by Singh and Nejadmalayeri (2004) that MNCs typically raise a longer-term debt than domestic firms do. It is thus resulted in higher cost of debt;
  b) change in efficient tax rate related to a move of profit centers in other countries: this factor directly influences the after tax cost of debt.

Hypothesis 2.3: Cost of debt is growing with an increase in DOI for a sample of Russian companies.

2.2.3. Hypotheses for Q-Tobin – DOI relationship
The Q-Tobin represents expectations of shareholders regarding future company's performance (mostly strategic investors, who are focused on long-term development of a firm). Given that internationalization strategies are used widely, we can expect that they create value in long term even if a short-term (current) internationalization effects may be negative. This may be explained by several factors such as a long-term benefits which could not be gained in short term (benefits from access to new technologies and R&D results), or short-term internationalization costs may be considered as investments in maintaining market position in long-term (for example a purchase of an abroad company way lower current performance but make a company better-off comparing to a case when a competitor makes this purchase), etc.

Hypothesis 3.1: Q-Tobin increases with increase of degree of internationalization for a sample of Russian companies. With low current performance related to internationalization Q-Tobin would be also lower.

3. The methods

3.1. The sample

The proposed research framework is applied on a sample of Russian companies. We have collected the data of 50 Russian companies which included:
  • 40 internationalized companies which have made at least one cross-border acquisition in the period from 2000 to 2010;
  • 10 domestic companies with a zero internationalization level which are included in the list of 200 Russian companies with the highest capitalization.

All chosen companies are public and disclose all the key information which should be used in the current research. The data is derived from Bloomberg database. The data has been collected for a time span from year 2005 to year 2010. Overall we have an unbalanced panel

of 183 observations. Moreover there exist some observations with missing values for some of the variables. Descriptive statistics for key variables in the dataset is depicted in Table 1.

Variable	Description	Obs	Mean	S. D.	Min	Max
Efficiency measures						
ROCE	Return on capital employed (%)	178	24,16	18,53	-19,58	108,44
WACC	Weighted aver. cost of cap. (%)	183	9,32	3,19	1,33	20,11
Internationalization measures (DOI)						
fsts	Foreign sales to total sales	183	0,32	0,32	0,00	0,98
fata	Foreign assets to total assets	103	0,10	0,19	0,00	1,00

Table 1: Key variable's description and statistics for the sample

3.2. Modeling procedures

We do separate estimations of ROCE, WACC and Q-Tobin's equations on panel data for years 2005-2010. We employ GLS estimates under assumption of random effects. A Hausman test is also used in order to test an endogeneity problem in panel data regressions. We also test for non-linearity and other formulated hypotheses. RI is calculated analytically based on the estimations of ROCE and WACC.

As for DOI the FSTS measure is used. We do not employ into the regressions the FATA measure because of its low availability. Nevertheless, due to a sample selection procedure where we have chosen the companies which conducted at least one cross-border M&A in the last decade, both assets and market international diversification are analyzed.

An equation for ROCE has the following form:

$$ROCE = X \cdot \delta + \alpha_1 \cdot fsts + \alpha_2 \cdot fsts^2 + \alpha_3 \cdot fsts^3 + \varphi \qquad (2)$$

where X is a matrix of the following control variables: firm size (measured by logarithm of sales), product diversification (measured by Herfindahl-Hirschman Index calculated on the basis of product segmentation disclosed by firms in their financial statements), book value of intangible assets normalized by total amount of assets, managerial agency costs (inverse of assets turnover ratio) and composite variables of DOI and product diversification as well as DOI and intangible assets ratio.

For testing the hypothesis 2.1-2.3 an equation for WACC has been decomposed into three parts: 1) financial leverage (share of debt in the capital employed), 2) cost of debt and 3) cost of common equity:

$$WACC(fsts) = \frac{D}{D+E}(fsts) \cdot CoD(fsts) + (1 - \frac{D}{D+E}(fsts)) \cdot CoCE(fsts) \qquad (3)$$

where D states for amount of debt, E − common equity, CoD - cost of debt , CoCE - cost of common equity. A share of preferred equity in capital structure is extremely low in the

studied sample and constitutes no more than 0.1% of capital employed and is not taken into analyses in the present research.

Thus according to the defined approach we estimate the following equations (4) – (6):

$$Debt\_to\_assets = \beta_0 + \beta_1 \cdot fsts + \beta_2 \cdot fsts^2 + \beta_3 \cdot fsts^3 + \beta_4 \cdot ROE3 +$$

$$+ \beta_5 \cdot growth3 + \beta_6 \cdot \ln\_sales + \beta_7 \cdot dummies + \varepsilon \tag{4}$$

$$CoD = \varphi_0 + \varphi_1 \cdot fsts + \varphi_2 \cdot fsts^2 + \varphi_3 \cdot fsts^3 + \varphi_4 \cdot ROE3 +$$

$$+ \varphi_5 \cdot growth3 + \varphi_6 \cdot \ln\_sales + \varphi_7 \cdot debt\_to\_assets + \varphi_8 \cdot dummies + \varepsilon \tag{5}$$

$$CoCE = \gamma_0 + \gamma_1 \cdot fsts + \gamma_2 \cdot fsts^2 + \gamma_3 \cdot fsts^3 + \gamma_4 \cdot ROE3 +$$

$$+ \gamma_5 \cdot growth3 + \gamma_6 \cdot \ln\_sales + \gamma_7 \cdot debt\_to\_assets + \gamma_8 \cdot dummies + \varepsilon \tag{6}$$

where *dummies* states for dummy variables representing industry of a firm and profitability shift related to crises years 2008 and 2009.

For testing the hypothesis 3.1 we estimate the following equation:

$$Tobin's\_Q = Y \cdot \delta + \alpha_1 \cdot fsts + \alpha_2 \cdot fsts^2 + \alpha_3 \cdot fsts^3 + \varphi \tag{7}$$

where *Y* is a matrix of control variables, which include: firm size (*ln_sales*), product diversification variable (*prod_divn_hhi*), proxy for agency costs measure (*asset_turnover*), measure for book value of intangible assets (*intang_to_tot_assets*), composite variables of DOI and product diversification as well as DOI and intangible assets ratio (*diverse* and *intasssales_to_fsts* correspondently), debt to assets ratio (*Debt_to_Assets*), three year average return to equity (ROE3), EBIT margin in current year (*Ebit_margin*), three year average sales growth rate (*Growth3*), dummy variables for industries using SIC and for a control of crisis period 2008–2009. The chosen variables are key variables, which influence Q-Tobin of internationalizing companies (for a detailed analysis of variables choice see Lu and Beamish, 2004; Chang and Wang, 2007).

4. Findings

4.1. Testing the ROCE to DOI relationship

In order to define a proper functional form of the ROCE-DOI relationship all variables have been initially included in the equation (2):

- To measure a direct internationalization impact on performance the cubic polynomial function components has been employed ($fsts$, $fsts^2$, $fsts^3$). It allows to test the formulated hypothesis of non-linearity of internationalization impact;

- To test two other hypotheses of an influence of product diversification and intangible assets on ROCE-DOI relationship two additional variables were used: composite variables of DOI and product diversification as well as DOI and intangible assets ratio.

The results of estimation are represented in Chart 1. Our main findings are as follows:

- We found out that the ROCE-DOI relationship follows a U-shape pattern (see Chart 1). At the early stage of internationalization (when the share of foreign sales is in the interval between 0% and approximately 50%) cross-border diversification significantly diminishes the return on capital employed. At the later stages of internationalization (when the share of foreign sales exceeds half of total sales) a sharp increase in profitability has been identified. As it is shown the initial drop in efficiency is compensated by its subsequent growth only at the level of absolute internationalization (FSTS > 90%). The significant drop in ROCE at the early stage of internationalization of Russian companies may be explained by both strategic motives (which presume return in the long run, e.g. a motive of acquisition of innovative technologies or new knowledge) and at the same time by possible irrationality of managerial behavior (such phenomenon as managerialism and hubris are studied in Seth et al. (2000)).
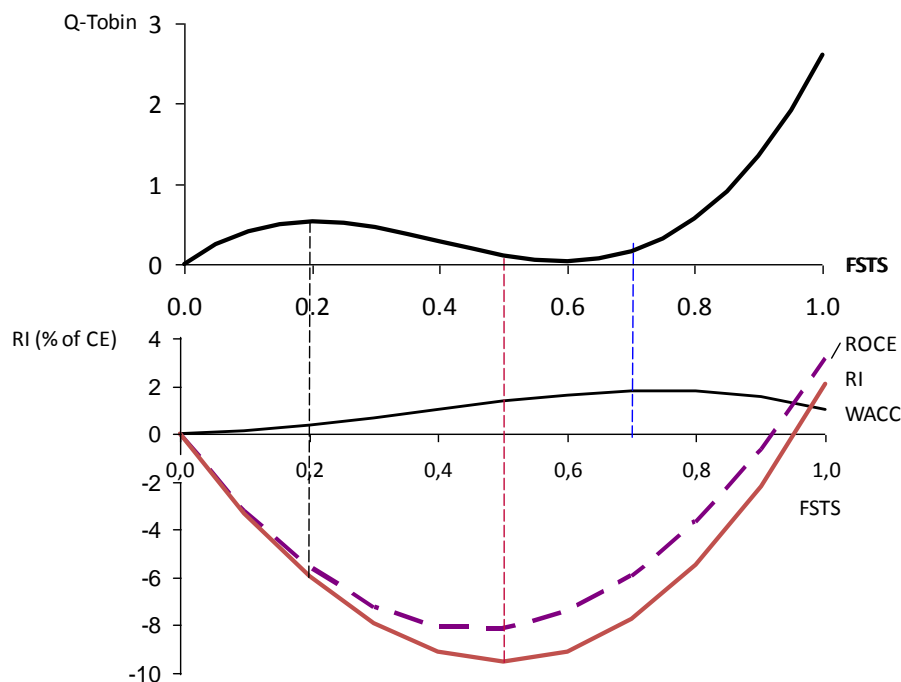

Chart 1: *Q-Tobin - Internationalization relationship compared to relationship of internationalization and current performance (RI)*

4.2. Testing the WACC to DOI relationship

According to the methodology described in the above section a separate estimation of influence of DOI on capital structure, cost of debt and cost of common capital has been carried out. The results are as follows (see also Chart 2):

- We identified no significant influence of DOI on capital structure (i.e. the choice between common equity and debt; these results of estimates for eq. 4 are not depicted in the paper);
- Cost of debt positively and significantly depend on DOI. The fact is described by the change in the time structure of debt – with an advancement of international diversification companies launch longer term projects which require external financing for longer periods of time. As it is commonly known longer term financing is typically associated with higher required return to debt;
- For the cost of common equity (CoCE) we found a non-linear relationship form. This form may be described by the proposition that at low degrees of internationalization shareholders consider CID as an addition of new internationalization-specific risks while at the later stages of internationalization they regard a firm as a well diversified portfolio of businesses in different countries, characterized by comparably lower level of risks;
- An estimation of weighted average cost of capital is computed analytically with a use of the given capital structure of each firm in each year (see Chart 2). We can conclude that CID typically increases the cost of capital employed (if compare to domestic firms).
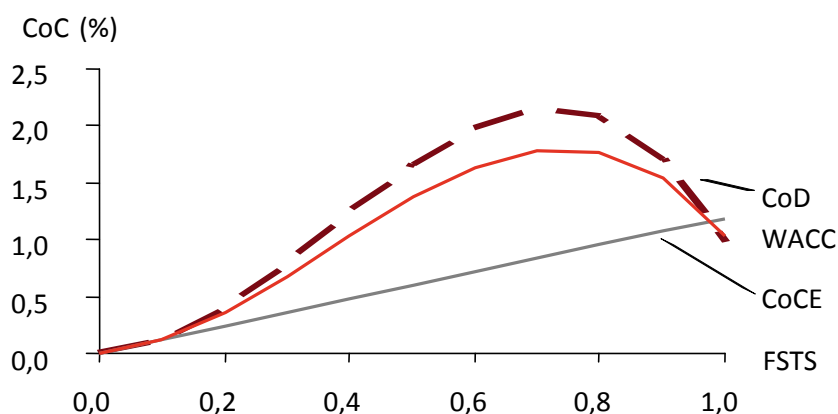

Chart 2: ROCE to DOI relationship: a U-shape curve

4.3. Estimation of economic profit

In present research the current performance measure is defined by an economic profit spread (or residual income spread) which equals to a difference between return on capital employed (ROCE) and weighted average cost of capital (WACC), see Chart 1. The results show that residual income ratio mainly follows the ROCE pattern. Influence of WACC on the economic profit margin is significant but rather low. The overall internationalization-performance relationship of Russian companies seems to follow a U-shape curve with a rather high variance in performance.

4.4. Estimation of Q-Tobin – DOI relationship

The estimation of Q-Tobin - internationalization relationship is depicted on Chart 1[7]. It is shown that the relationship follows a horizontal S-shape curve, which consists of 3 stages:

- Stage 1 – start of internationalization (DOI is between 0 and 0.2). On this stage there may appear a value creation due to low dependence of the whole business on international affairs but potentially significant benefits (access to technology, markets which are similar and close to domestic, etc).;
- Stage 2 – adaptation to internationalization (DOI is higher than 0.2 and lower than 0.7). The business suffers from increasing transaction costs and a need for transformation in order to adapt to new international structure;
- Stage 3 – matured multinational (DOI higher than 0.7). The business is well adapted to the international structure, it gains the whole number of benefits, but not tackles with the problem of over complexity (where efficiency starts decreasing).

In comparison of the Q-Tobin – DOI and RI – DOI results it should be stated that on overall the internationalization strategies are expected to create value in long term regardless to a drop in current performance of a firm. Thus a drop in current performance should be mostly explained not by irrational motives of management, but mostly by strategic aspects which presume competitive advantages in long run.

5. Conclusions and policy implications

This paper contributes to the internationalization-performance literature by proposing a new approach for measuring corporate performance related to internationalization which is based on economic profit concept. This new method simultaneously accounts for a change in profitability (measured as return on capital employed) and opportunity costs (measured by weighted average cost of capital) related to a level of cross-border diversification. The methodology of empirical estimation of internationalization efficiency has also been developed.

The proposed methodology has been used for estimation of efficiency of internationalization strategies of large Russian companies. It has been shown that internationalization-performance relationship follows a U-shape curve (the finding is consistent with the results of Contractor et al. (2007) derived for another emerging market - India). At the initial stage of international diversification corporate performance declines while at further stages of diversification it grows up. This form of regularity is driven mainly by companies' operating performance (return on capital), while opportunity costs (cost of capital) changes also in a non-linear pattern but with a lower effect. Regardless a drop in current performance related to internationalization the stock market expects that in long run the internationally diversified firm could create higher value than the local peers.

As an implication of the present research for corporate decision makers it may be stated that at the initial level of international diversification the internationalization decisions should be

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[7] Chart 1 represents the Q-Tobin – DOI relationship for an average degree of product diversification.

made with a high degree of caution. The prestige and other irrational motives which may lead to the value destruction should be pruned. During the analysis of internationalization efficiency not only operational, but also financial effects should be counted. Companies should also be ready for a probable initial decline in operating performance motivated by an excess of internationalization costs over corresponding benefits.

As for long run internationalization strategy on average we state the following two are likely to be the most sustainable: a) *local focus strategy* with low degree of internationalization (get missing technology or go to nearest well-known abroad markets) and proposition of well customized local products, b) *fully internationalization strategy* with lower level of country-specific customization, but higher operating efficiency.

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