Corporate governance mechanisms and agency costs: cross-country analysis

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Abstract

Purpose – *The purpose of this paper is to investigate whether specific corporate governance mechanisms, such as board size, board composition, leverage and firm size, tend to mitigate agency cost occurrence in the USA, Russia and Norway.*

Design/methodology/approach – *The authors analyze the sample of 243 US, 196 Russian and 175 Norwegian joint stock companies for the period 2004-2012. The regression analysis is applied to test the models.*

Findings – *It is revealed that larger boards increase agency costs (measured by asset utilization ratio and asset liquidity ratio) in all sample companies. The proportion of female members has a very slight positive effect in US companies, a negative influence on agency costs in the Norwegian sample and is not significant in the Russian market. The authors find that the big Russian and US companies in the samples of this paper have lower agency costs.*

Practical implications – *The results of this paper show which agency-mitigation mechanisms work more effectively in companies operating in the analyzed countries characterized by specific corporate governance models.*

Originality/value – *The main contribution of this paper to the empirical literature is that it extends the stream of agency research by introducing new, emerging markets: represented by Scandinavian (depicted by the Norwegian sample) and Russian companies. Considering that each market – US, Norwegian and Russian – represents significant distinguishing features in their institutional framework, the paper provides an important research setting in which corporate governance mechanisms can be analyzed from the perspective of a country's peculiar characteristics. Unlike other agency cost studies, this paper accounts for the gender diversity component in the companies and contributes to gender diversity issues.*

Keywords *Gender diversity, Agency costs, Board size, Corporate governance mechanisms, Cross-country analysis*

Paper type *Research paper*

Introduction

The complexity and uncertainty of the contemporary business environment have a very significant influence on companies when they shape their actions and identify key objectives. In light of a number of corporate scandals, companies are paying more attention to corporate governance practices, particularly aligning the interests of shareholders and managers to minimize the exposure to the principal–agent problem. Following Jensen and Meckling (1976), the agency problem gives rise to agency costs, which is defined as the sum of the monitoring expenditures by the principal, the bonding costs by the agent and the residual loss.

The objective of this paper is to define the specific corporate governance mechanisms, such as board size, board composition, leverage and firm size, that tend to mitigate agency cost occurrence in the USA, Russia and Norway.

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The value added of the present paper can be explained by the following aspects. Previous papers in this area (Ang *et al.*, 2000; Doukas *et al.*, 2000; Singh and Davidson, 2003, Florackis, 2008; Henry, 2006; Fleming *et al.*, 2005) have mostly been grounded on a one-country sample – the USA, the UK or Australia. So there is almost no research in the sphere based on emerging markets (Li *et al.*, 2008). Moreover, the few non-US empirical studies investigate only relatively small samples.

What is also important is that the current findings based on the data from developed markets are not applicable to the corporate governance systems in emerging economies (Li *et al.*, 2008; Wright *et al.*, 1996). Therefore, we do not have enough knowledge about the trends and determinants of corporate governance mechanisms in countries with different legal, institutional and regulatory systems. This paper brings a new insight on these country-specific mechanisms and their influence on agency costs in the context of different institutional frameworks. This approach allows us to comprehensively analyze what determines the agency costs in developed and developing markets.

The main contribution of this paper to the empirical literature is that it extends the stream of agency research by introducing new, emerging markets: represented by Scandinavian (depicted by the Norwegian sample) and Russian companies. In addition to that, the study adds arguments to the ongoing debate on whether bigger or smaller board size constitutes a strong corporate governance mechanism. Considering that each market – US, Norwegian and Russian – represents significant distinguishing features in their institutional framework, the paper provides an important research setting in which corporate governance mechanisms can be analyzed from the perspective of a country's peculiar characteristics.

The remainder of this paper is organized as follows. The first part provides background information about different corporate governance models. In the next section, we discuss related theory and formulate hypothesis. Then, we describe the data and methodological approach. At the end of the paper, we provide the empirical analysis results and the key findings.

Corporate governance models in the USA, Norway and Russia

Anglo-Saxon and European corporate governance models

The Anglo-Saxon, or market-centered, system is present in the USA and the UK, while a bank-centered Continental model is common in Continental Europe (primarily in Germany), Japan and some of the emerging Asian economies (Cernat, 2004). Evidence from the literature shows that the Anglo-Saxon model is based on the agency theory, whereas the Continental model is based on the stakeholders theory (Jensen and Meckling, 1976).

The Anglo-Saxon system is characterized by dispersed ownership and control, and therefore, agency problems arise from the conflict of interest between owners and management. Bush (2005) suggests the fact that because security regulation is effectively the only mechanism regulating the activities of individual firms, firm boards can take any decisions as long as the market price goes along with their behavior, no matter whether the decision is in the shareholders' interests or not. This reliance on outside markets creates extra opportunities for managers to misrepresent firms' financial statements. At the same time, limited monitoring of managers from the shareholders side encourages owners to design corporate governance mechanisms, which will restrict agents from self-interested behavior. In contrast, the Continental model has a relatively high concentration of both ownership and control. The principal–agent conflicts are not substantial due to the control ensured by several large shareholders. However, the pitfalls of the system appear in the rather underdeveloped market for corporate control and the potential conflict of interest between minor and large shareholders, as the latter might tend to extract private benefits from the company.

Corporate governance model in Norway

The Nordic countries have advanced market economies with corporate governance systems characterized by well-developed and international capital markets. A number of large Norwegian companies have a dispersed ownership structure with a separation of the ownership and management roles, yet with high standards of transparency requirements. Kaplan (1998) implied that Scandinavian corporate governance is moving closer toward the Anglo-Saxon corporate governance system. However, unlike the USA and the UK, they still have a considerably less developed market for corporate control. Another feature is that many small- and medium-sized firms have one (or a few) controlling shareholders, who play an important role in the company governance (Mishra *et al.*, 2001). The board structure in Norway lies between the one-tier (Anglo-Saxon type) and two-tier (Continental type) models, with the majority of listed companies using a two-tier system. The CEO is responsible for the day-to-day management, while strategy, internal control, risk management and other activities are run according to the competence of the board.

Norway is an economy which focuses substantially on stakeholder rights – particularly the rights of the employees (Huse and Eide, 1996). In addition to that, La Porta *et al.* (1998) emphasize that to balance the power of the major shareholders, the interests of the minority shareholders have to be strongly protected.

A common perception of Norwegian companies is that they are mainly family owned or at least the founding family has a substantial influence on the company's performance. La Porta *et al.* (1998) document that founding families holding at least 20 per cent of the firm's shares are present in 25 per cent of the Norwegian firms. However, not many publicly traded Norwegian companies have a founding family ownership of 50 per cent or more.

The evidence above shows that a so-called Scandinavian model "balances" between both the Anglo-Saxon and the Continental models. Yet legislation (e.g. quotas for women on the board of directors), specific aspects of the ownership structure and cultural peculiarities make the Scandinavian model different from other models.

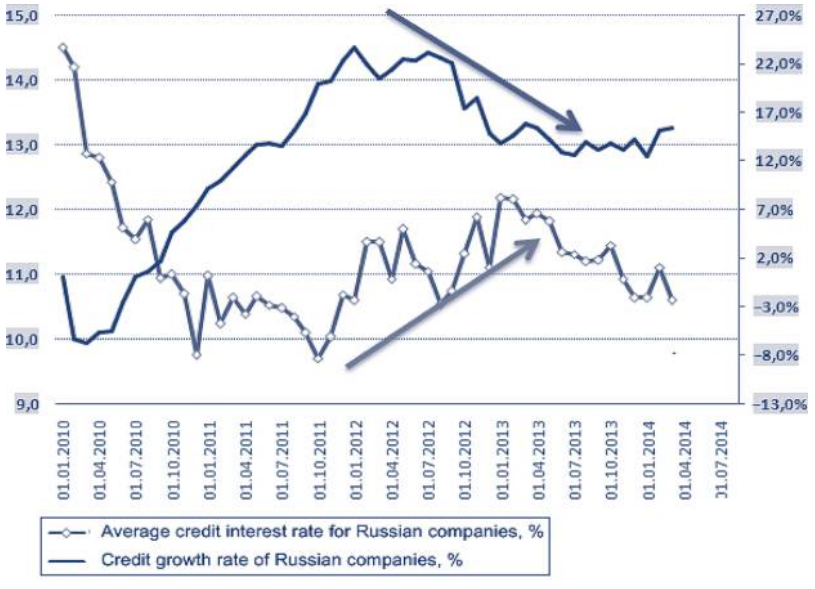
Corporate governance model in Russia

The completion of the voucher privatization in the middle 1990s gave the first highlights of the corporate governance issues in Russia (Dolgopyatova, 2005). However, a truly important aspect – for the country, companies and the research – is that the role played by this issue started only during the past decade.

The agency problem in Russia is primarily characterized by the conflict of interest between managers and shareholders: once the privatization was finalized, a lot of managers took advantage of their positions to act in their self-interest at the expense of the firm's owners. In that sense, Russian corporate governance in many ways resembles the Anglo-Saxon model. However, a great number of Russian companies still do not demonstrate the separation of ownership and control (Dolgopyatova, 2005). The Anglo-Saxon model implies that countries exhibiting this type of model have highly developed market-oriented economies with strongly protected shareholder rights. From this point of view, the Russian system resembles more the Continental (German–Japanese) model, where the importance of multiple stakeholders prevails over shareholder rights. As Dolgopyatova (2005) documents, if Russian corporate governance continues to develop, banks can start to exercise considerable power – similar to the Continental model.

The underdeveloped institutional environment with its weak control mechanisms stimulated the Russian corporate sector to move toward the emergence of a large controlling ("blocking") shareholder with consolidated stock (Stiglitz, 1999) – another important characteristic of the Continental model. Companies are dominated by insider control and attract external sources of finance from Russian and international banks. During the period of research, there was a clear-cut trend of an increase in financing, as shown in Figure 1.

Figure 1 The trend in credit financing of Russian companies for the period 2010 – 2014



Source: Based on the data from the Central Bank of the Russian Federation: www.cbr.ru

Regarding the board of directors, according to the Russian regulations, companies are allowed to have any of the board structures: one- or two-tier (Federal Law, 2005). In addition to that, following the Federal Law (Chapter 8), companies are also allowed to establish a collective executive board – a multi-tier board structure.

Russia, therefore, has both Anglo-Saxon and Continental model features but does not entirely belong to either of them and is evolving toward a different, culturally embedded model of corporate governance.

Analysis of literature and hypotheses

Agency costs measurements

One of the most complicated issues when studying agency costs is finding the appropriate approach to measure them. In this paper, we use two alternative ways to proxy the level of agency costs: first, asset utilization ratio; and second, asset liquidity ratio. In spite of the considerable amount of research on the topic of agency costs, the measurement issue was not raised very much.

Two primary approaches to measure agency costs are seen more often in the research: absolute and relative (Ang *et al.*, 2000). Measuring agency costs in absolute terms requires a reference point of comparison: a zero agency-cost base, that is, a firm owned by a single owner-manager (Jensen and Meckling, 1976). When management ownership is less than 100 per cent, agency costs occur. The absolute approach to measure agency costs imposes considerable application difficulties. On the one hand, due to a number of regulations, no publicly traded firm is owned solely by a single owner-manager. Therefore, only private firms can be considered as having a zero agency cost base. On the other hand, private firms do not disclose enough information to the public, which makes it almost impossible to adequately conduct the research. Therefore, the relative approach to measuring agency costs is preferable.

Measuring in relative terms implies using various measures to proxy for the level of agency costs.

Corporate governance mechanisms

To minimize corporate exposure to the agency problem, it is crucial to ensure its effective control procedures (Fama and Jensen, 1983). Different approaches have been taken to identify the attributes that potentially have a mitigating effect on agency costs. The first stream of research focuses on the mechanisms that have a direct effect on the agency conflict, rather than investigating effects on the firm performance with an ensuing analysis on the agency cost consequences. There are a number of internal agency-mitigating mechanisms available in the firm. Managerial ownership, for instance, has been suggested as a potential mechanism helping to align the interests between managers and shareholders, and therefore to reduce agency costs (Crutchley *et al.*, 1999).

A considerable number of the empirical literature focused on studying the interrelation between agency-mitigating mechanisms and firm performance, with positive performance outcomes stimulating agency costs reduction. Mechanisms related to the characteristics of the board of directors are of paramount interest in this context. First, there is an ongoing debate on whether small or large boards are more preferable for agency cost mitigation. Pearce and Zahra (1991) find that as large boards are more powerful, they have a positive influence on firm performance, reduce agency problems and decrease agency costs. However, other studies, such as Yermack (1996) and Eisenberg *et al.* (1998), suggest that large boards are less effective than the small ones. The main argument is that larger boards make coordination, communication and decision-making more complicated which prevents them from monitoring function and controlling managerial actions better. Therefore, our first hypothesis is:

H1. Smaller boards have lower agency costs.

The findings regarding the effect of the board composition on agency costs are generally mixed. It is argued that by providing better monitoring and expert knowledge, outside directors will contribute to value-maximizing decisions (Borokhovich *et al.*, 1996; Hermalin and Weisbach, 1991). On the contrary, Klein (1998) and Bhagat and Black (2002) have the opposite evidence: the presence of more internal directors reduces agency costs, as they have more insider information at their disposal. Hermalin and Weisbach (1991) and Mehran (1995) did not find any statistically significant relation between external and independent directors and agency costs.

The issue of gender diversity in boardrooms and top management has received increasing attention in the academic literature. Erhardt *et al.* (2003) define a positive relationship between the number of women on a board and a company's financial performance. Jurkus *et al.* (2011) got the same results by finding an inverse relationship between the percentage of female board members and agency costs. Interestingly, Carter *et al.* (2003) proved that gender diversity is only beneficial in the firms with weak corporate structure. Some studies, however, present evidence of the negative effect of gender diversity on firm performance (Adams and Ferreira, 2009; Darmadi, 2013). The second hypothesis of this study is:

H2. Agency costs and the proportion of female board members are negatively correlated.

Leverage has been claimed to be a mechanism that potentially contributes to agency costs mitigation (Jensen and Meckling, 1976; Ang *et al.*, 2000). Firms with a higher level of debt are better monitored by creditors, and thus, there are fewer opportunities for managerial opportunistic behavior, which results in lower agency costs. Therefore, our third hypothesis is:

H3. Agency costs will decrease with increasing leverage.

Finally, company size belongs to the control mechanisms. Agency costs are supposed to be higher for bigger companies, as they are more diversified and have more comprehensive organizational structures (Doukas *et al.*, 2000). Consistent with Henry (2006), we also argue that bigger companies are more prone to agency problems. The fourth hypothesis of this study is as follows:

H4. Bigger firms have higher agency costs.

The list of the corporate governance mechanisms discussed above is not complete. More internal and external agency-mitigating attributes can be considered to contribute to resolving agency conflict in the firm.

Data, variable measurement and methodological approach

Sample and data description

The data consist of a sample of 614 joint stock companies, of which 243 are from the USA, 196 are from Russia and 175 are from Norway. We excluded 17 companies from the sample, as they were observed as outliers according to the test. Our panel data set covers the pre-global financial crisis period (2004-2007), the crisis period (2008-2009) and the post-crisis period (2010-2012) for the samples from three countries. The companies in the sample cover five industries: Oil and Gas, Industry Manufacturing, Electrical and Utilities, Trade and Retail, Telecommunication Services and IT. The US companies are classified according to the GICS codes, the NACE sector classification is used for the Norwegian companies and the Russian Economic Activities Classification System (OKVED) for the Russian firms. The samples were restricted to sectors which could be suitably represented in each of the three countries. Table I provides a summary of the sample firms' industrial distribution.

Our data were extracted from several sources. We used the database prepared by SNF, Institute for Research in Economics and Business Administration, to collect the data from the Norwegian companies. The database includes various financial and non-financial data on Norwegian companies, as well as aggregated data on industry groups for the period 1992-2012. The data regarding the American companies were obtained from COMPUSTAT database, which is available at Wharton Research Data Services (WRDS).

The primary source of data from the Russian firms is from annual report documents and from the databases SKRIN, SPARK and Thomson Reuters (DataStream and Thomson One). Data on corporate governance, the board of directors and selected financial variables were hand-collected from companies' corporate Web pages and other resources, such as www.micex.ru, www.finam.ru and www.rbc.ru.

Variable measurement and research methodology

The following two proxies were used in this paper to measure agency costs:

1. *Asset utilization ratio*: As in Ang *et al.* (2000) and Singh and Davidson (2003), the ratio is measured as annual total sales divided by annual total assets. The assumption is that higher asset utilization ratio means that the management takes decisions that improve

Table I Industrial distribution of the sample

	No. of firms observed			*Sample %*		
Industry	*USA*	*Norway*	*Russia*	*USA*	*Norway*	*Russia*
Oil and gas	46	31	15	18.9	17.7	7.7
Industry manufacturing	74	49	61	30.5	28.0	31.1
Electrical and utilities	54	38	37	22.2	21.7	18.9
Trade and retail	40	25	64	16.5	14.3	32.6
Telecommunication services and IT	29	32	19	11.9	18.3	9.7
Total	243	175	196	100	100	100

a firm's overall performance and create value for shareholders. Hence, it helps to balance the interests of agents and principals, thus reducing agency costs.

2. *Asset liquidity ratio*: It is measured as the sum of cash and marketable securities scaled by total assets. Lower asset liquidity ratio should positively affect the mitigation of agency costs, for the management has less cash to use on decisions that are not beneficial for shareholders, and therefore, there are fewer opportunities for opportunistic behavior. This assumption complements Prowse (1990); Henry (2006) and Siddiqui *et al.* (2013).

Four agency mitigating mechanisms, including a control variable, represent independent variables of the analysis:

- *Board size (BSIZE)*: It is measured as the total number of board members.
- *Share of women on the board (BWOM)*: The ratio of the number of women to the total number of directors on the board.
- *Leverage (DEBT)*: It is measured as total debt divided by total assets.
- *Firm size (SIZE)*: It is measured as a natural logarithm of annual sales.
- *Industry controls (INDUSTRY)*: A set of dummy variables for five industries (Table I).
- *Crisis effect controls (CRISIS)*: A set of dummy variables taking a value of 1 for the pre-crisis period, 2 for the crisis and 3 for the post-crisis period.

We conducted random effects regression analysis to test the effects of the agency-mitigation mechanisms on the agency cost proxies for our panel data sample. The following base model of the research is evaluated for each of the two agency cost measures:

$$ACOST_{it} = \beta_0 + \beta_1(BSIZE_{it}) + \beta_2(BWOM_{it}) + \beta_3(DEBT_{it}) + \beta_4(SIZE_{it}) + \beta_5(INDUSTRY_{it}) + \beta_6(CRISIS_{it}) + \varepsilon_{it} \quad (1)$$

where $ACOSTt_{it}$ refers to the agency costs proxies (asset utilization and asset liquidity ratio) of company i in the year t, β_0 is the overall intercept term and ε_{it} is the observation error. A description of the independent variables was presented earlier in the paper.

Findings and discussion

Descriptive statistics

The objective of this paper is to contribute to the empirical literature by measuring agency costs and identifying the agency mitigating mechanisms from a large sample of US, Norwegian and Russian joint stock companies. Table II reports the descriptive statistics for the two agency cost proxy measures and the corporate governance mechanisms from a

Table II Sample descriptive statistics

	USA		Norway		Russia	
Variable	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
Asset utilization	0.745	0.941	0.855	2.736	0.731	0.198
Asset liquidity	0.114	0.105	0.071	2.079	0.085	0.239
Board size	8.125	1.928	6.314	2.183	8.917	2.294
Women on board	0.182	0.176	0.520	0.358	0.107	0.148
Leverage	0.628	2.266	0.338	3.092	0.460	0.292
Firm size	13.887	1.852	7.294	2.412	12.486	2.480

Notes: The asset utilization ratio is total sales divided by total assets. Asset liquidity ratio is the sum of cash and marketable securities divided by total assets; board size is the total number of board members; women on board is the proportion of female members on a board in relation to the total number of directors on board; debt is the percentage of total debt to total assets; firm size is measured as a natural logarithm of annual sales

sample covering a nine-year period (2004-2012). The highest average asset utilization ratio of the sample firms was seen in the Norwegian companies (0.855), while the ratios for the American and Russian companies equaled 0.745 and 0.731, respectively. As for the asset liquidity ratio, the mean proportion of the US companies is 11 per cent – the highest in the sample – with 7 per cent for the Norwegian and 8 per cent for the Russian companies. The result of the US firms corresponds very much with the evidence provided by Prowse (1990), who reported an asset liquidity ratio of 12 per cent. Based on the evidence provided by the descriptive statistics, we cannot make a general conclusion regarding which companies in the different countries have the highest agency costs – the results are different depending on the measure. Based on the asset utilization model, it can be documented that since the Russian companies have the lowest ratio, agency costs are higher there. However, judging from the asset liquidity, American companies experience higher agency costs.

In terms of the asset-mitigation mechanisms, the average board size in the US sample of firms is eight members, six in the Norwegian and nine in the Russian. The proportion of female board members is the highest for the Norwegian sample companies, with over 50 per cent of women on board. Both the US and Russian companies have a considerably lower proportion, that is 18 and 10 per cent, respectively. The mean leverage ratio demonstrates that the US companies have a debt ratio of 62 per cent, and there is a lower percentage for the Russian and Norwegian companies: 46 and 33 per cent, respectively.

Regression results

In this section, we present the results of the multivariate regression analysis relating agency-mitigation mechanisms to agency costs proxies (asset utilization and asset liquidity ratio). We checked for the appropriateness of both fixed effects and random effects regressions in our sample of firm panel data. According to the results of Hausman test, the random effects multivariate regression was conducted to investigate the character of the relationships between selected corporate governance mechanisms and agency costs. Our expectations were discussed earlier in the paper. Table III reports the model regression results.

The results above indicate a negative relationship in the US companies, between the board size and asset utilization, meaning that larger boards are associated with lower asset utilization ratio and, thus, higher agency costs in the firm. As for the second model – asset liquidity – we find a significant positive relationship between the board size and the agency costs proxy: firms with larger boards have a higher asset liquidity ratio, which increases agency costs. Therefore, our first hypothesis is supported. This documented evidence is in line with the results presented by Yermack (1996); Siddiqui *et al.* (2013); Singh and Davidson (2003); Truong and Heaney (2013) and Florackis (2008). The potential problems of large boards become more evident in light of boards' specific functions and effectiveness, which are determined by the institutional and legal environment. As boards

Table III Regression results from testing the hypotheses about the relationships between agency costs proxies and agency-mitigation mechanisms

Variables \ *Country*	*Model 1 (Asset utilization)*			*Model 2 (Asset liquidity)*		
	USA	*Norway*	*Russia*	*USA*	*Norway*	*Russia*
Intercept	−1.221 (−2.78)**	−1.563 (−2.12)*	−1.179 (−2.24)*	1.782 (3.29)**	1.273 (2.78)**	1.638 (2.61)**
Board size	−0.114 (−3.29)***	−0.691 (−3.12)***	−0.008 (−2.84)**	0.143 (2.80)**	0.893 (2.96)**	0.009 (2.31)**
Women share	0.013 (2.59)**	−1.479 (−4.62)***	0.081 (0.58)	−0.014 (−3.61)***	0.270 (0.32)	0.209 (0.65)
Leverage	0.139 (2.87)**	−0.098 (−2.04)*	0.038 (0.094)	−0.019 (−3.30)***	1.231 (3.89)***	0.232 (3.70)***
LnSales	0.210 (2.98)**	0.069 (0.11)	0.217 (5.12)***	−0.017 (−3.14)***	1.893 (0.12)	−0.023 (−4.45)***
Industry and year dummies	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.245	0.192	0.228	0.194	0.430	0.343
F-statistic (probability)	0.000	0.001	0.000	0.002	0.000	0.000

Notes: This table presents panel data of random effects regressions of corporate governance mechanisms and agency costs (as a proxy of asset utilization and asset liquidity ratio); industry and year dummy variables are included in the regression models; *t*-statistics results are represented in brackets; ***; **; *significant at the 1, 5 and 10% levels, respectively

play a very strong monitoring role in the US companies, it is expected that smaller boards will provide more effective oversight of management (Guest, 2008). The effectiveness of large boards is undermined by problems of poor communication and more complex decision-making. Large boards tend to be more beneficial for heavily regulated industries, such as financial or health sectors. Those, however, were not included in our sample.

The Norwegian companies are similar to our US sample in that board size has a significant negative relationship with the asset utilization ratio and a positive one with the asset liquidity ratio. Our result is consistent with Yermack (1996) and Mishra *et al.* (2001), who studied a sample of 120 Norwegian firms. Many of the companies are still characterized by a large share of the government ownership, which raises challenges similar to dispersed ownership problems in the Anglo-American model. Interestingly, some of the largest CEO remunerations are also observed in the government-owned firms. In that sense, board becomes an important mechanism for reducing potentially large agency costs. Small boards tend to function better, also considering relatively small size of the Norwegian companies. "Smaller boards might also help to manage the interrelationships between board members more effectively" (Mishra *et al.*, 2001, p. 22) – which is important considering that multiple board positions are observed in a number of the Norwegian boards.

As for the Russian companies, we also do not find any controversial results – bigger boards tend to increase agency costs in the companies. Our results are consistent with the evidence documented by Pirogov and Bobryshev (2009), who studied the relationship between agency costs and ownership structure in 131 Russian and Eastern European sample firms. Such evidence from the Russian companies can be explained by the weak control mechanisms – one of the characteristics of the Russian corporate governance system discussed earlier. Large boards, operating in an environment with weak legal protection of shareholders' rights and weak control mechanisms, give rise to significant opportunistic power behavior.

One of the contributions of this paper is the inclusion of the new variable in the model – the proportion of women on a board. We have not found recent papers where the authors studied this agency-mitigation mechanism in the same context as in this paper – as a corporate governance mechanism to reduce agency costs. Therefore, the regression results of this variable are especially interesting to investigate. We expect that agency costs and the proportion of female board members are negatively correlated.

The coefficient is positive and statistically significant for the US companies at the 5 per cent level – for the asset utilization model. A negative coefficient for the asset liquidity model also proves a positive effect of the women on board. Thus, *H2* is supported. However, the coefficient's magnitude is very close to 0, meaning that a larger proportion of female members on a board increases the efficiency of the asset use in the firm and, thus, reduces agency costs to a very limited extent. This result can be explained by the evidence provided by the work of the American psychologists Schultz and Schultz (2007). The authors documented that American women do not consider that men have any beneficial features as compared to women in terms of being a successful manager. In addition to that, they find that subordinates of both sexes tend to have a similar attitude toward both their male and female bosses, and they give no evidence for differences in functions related to problem solving, people or management. Also, Carter *et al.* (2003) proved that gender diversity is only beneficial in the firms with weak corporate structure. As discussed earlier in the paper, US firms are characterized by a very-well developed and regulated corporate governance model.

Our evidence also goes in line with the theory developed by Kanter (1977). According to the author, an improvement in team performance (and further improvement in the company's financial performance) will only occur when the team can be considered as gender-balanced – that is, at least 35 per cent women. As shown in the descriptive

statistics results for our sample firms (Table II), on average only 18 per cent of the total board members are female in the American companies. Therefore, the effect of women on a board is not substantial.

The analysis of the same agency-mitigation mechanism for the Norwegian companies appeared to be the opposite to our prediction and the results reported for the American companies: more women on a board decreases the asset utilization ratio and therefore increases agency costs. The variable is not significant in the asset liquidity model. Such results for the Norwegian sample can be explained by the specific country regulations. Norway was the first country to introduce a quota for women on company boards. Matsa and Miller (2013) and Ahern and Dittmar (2011) studied the impact of such legislation on companies' performance. The evidence suggests that there was a decline in company's performance. The reason for the finding can be explained by the fact that as companies were forced to hire women as board members, they focused much less on their competences and experience. Therefore, the decrease in company's profitability and value was not related to the increase in the proportion of women on board, but rather to their age and lack of experience.

We find no evidence that the proportion of female board members is significant for the Russian firms.

The results for our third independent variable – leverage – showed mixed evidence for different countries. We hypothesized that agency costs will decrease with increasing leverage.

We find that regarding the asset utilization model for our American sample, the coefficient is significant and positive. These results suggest that the existence of debt is associated with more efficient asset use and reduced agency costs and is consistent with the conjecture of Ang *et al.* (2000) and Fleming *et al.* (2005) that additional debt decreases agency costs. This can also be supported by the American corporate governance model. As American companies are characterized by the dispersed ownership structure, more control and monitoring associated with the existence of debt tends to mitigate agency costs. As for the asset liquidity model, the coefficient is significant and negative, meaning that *H3* is supported. The evidence that the coefficient is close to 0 is in line with the results presented by Fleming *et al.* (2005), who find that debt has very little impact on the level of discretionary expenses – a measure that is, as with asset liquidity, adversely related to the agency costs.

Our results from the Norwegian sample do not support the expected relationship between debt ratio and agency costs. Although significant, we find that regarding both models, leverage tends to increase agency costs in the Norwegian companies. Even though not expected, this result is consistent with the results of Singh and Davidson (2003) and Truong and Heaney (2013). As the authors find this evidence for different samples, it is important to analyze why leverage is not a necessary but rather a detrimental mechanism for monitoring in the Norwegian companies. Due to the fact that a chairman or CEO duality is not allowed in publicly traded firms in Norway, the chairman has an enhancing monitoring role on a board (Randøy and Nielsen, 2002). Furthermore, a shareholder of a company with the one-tier board structure has enough power to place trusted directors, who will run the company in accordance to his command. In addition to that, rather than search for external control mechanisms, the presence of dominant shareholders is welcomed, as they are able to monitor and discipline management (Hansen, 2007). Interestingly, Fama and Jensen (1983) suggest that family relationships between managers and owners – common in Norway – tend to reduce agency costs and provide improved monitoring of the mangers, thanks to their long-term nature.

The evidence from the Russian companies shows that leverage is not significant in the asset utilization model. However, it does have a positive relationship with agency costs in the asset liquidity model, meaning that, unlike our expectations, larger debt ratio tends to

increase agency costs. This result is consistent with the results of Truong and Heaney (2013). As shown in the text of this paper, banks started to play a more important role in the financing of the Russian companies. Due to the affordability of the loans, yet very limited investment opportunities, companies experienced an increase in liquidity. Therefore, in spite of the increased external control, underdeveloped corporate governance systems allow managers to take non-value-maximizing decisions, which increase agency costs.

In relation to our fourth independent variable – firm size – we define, for the American firms, a positive (negative) significant relation to agency costs for the asset utilization model (asset liquidity). Hence, unlike our predictions, bigger firms have higher asset utilization and lower asset liquidity ratio, which means lower agency costs. This finding is consistent with the findings of Fleming *et al.* (2005) and McKnight and Weir (2009). Large US companies have more resources to meet tough disclosure requirements. Another aspect to consider is that firm size captures business diversification, and therefore, asset utilization increases with size – according to Singh and Davidson (2003).

Given the insignificant figure for the firm size for both the Norwegian company models, there is no evidence to assume that firm size has any effect on the agency costs in the sample of the Scandinavian firms.

However, the results for Russia are consistent with the ones we documented for the American companies: that is, a positive and significant coefficient for the asset utilization model and a negative one for asset liquidity. This evidence does not support our fourth hypothesis, meaning that bigger Russian firms experience lower agency costs. This can be explained by the fact that in Russia big companies incorporate well-developed corporate governance systems. For example, one of the largest national telecommunications companies in Russia – Rostelecom – uses high western corporate governance standards, including the ones for information transparency. The company applies the Code of Corporate Governance and the Code of Ethics, which ensures high standards of corporate practices acknowledged all over the world. The Codes also include regulations on the conflict of interest issue (Rostelecom Annual Report, 2011).

As for other control variables – industry and year – the examination of the industry variables did not show any statistically significant coefficients. We do, however, find that the crisis negatively affected asset utilization ratio in the American and Russian sample firms. Therefore, lower asset utilization ratio and related higher agency costs might be not only due to the companies' specific characteristics but also due to the negative effect of the crisis period.

Conclusion

In this paper, we analyze the relationship between agency-mitigation mechanisms and the two proxies used to capture agency costs – asset utilization and asset liquidity ratios – on the sample firms from three different countries: the USA, Norway and Russia. Our empirical study covers a nine-year period: 2004-2012. We find it particularly interesting to analyze and explain the effect of various mechanisms in each of the sample countries from the perspective of their corporate governance-specific characteristics. In addition to such mechanisms as board size, leverage and firm size, which have been proven to be effective corporate governance mechanisms in previous research, one of the contributions of our study is the inclusion of a new variable – the proportion of female members on a board. Interestingly, our results showed that the variable appeared to be significant in both models only for the American companies, but the coefficient was not very different from 0. In addition to that, in contrast to our predictions, we define that more women on a board has a negative effect on a company's asset utilization efficiency and, thus, increases agency costs in the Norwegian sample. Therefore, the introduction of the quotas of women on a board might have a negative effect on a company's performance.

As for the board size, our findings are consistent with the major assumption: companies with smaller boards have lower agency costs. Similar evidence was documented by Yermack (1996); Singh and Davidson (2003) and Truong and Heaney (2013).

Other variables, however, showed mixed results. While leverage, as expected, has a positive impact on agency costs reduction in the American companies, we find the opposite evidence for the Norwegian sample. As the US companies are characterized by dispersed ownership structure and rather complicated structures, leverage does play an important role as a mechanism of control and monitoring. The finding is consistent with the findings of Ang *et al.* (2000) and Fleming *et al.* (2005). Norwegian companies, on the other hand, are associated with relative transparency and low corruption, the avoidance of nepotism, while pyramid business structures are not common (Mishra *et al.*, 2001).

These findings have important managerial implications, for the results show which agency-mitigation mechanisms work more effectively in a particular company operating in a country with a specific corporate governance model.

There are several limitations to this study. First of all, we used two measures as a proxy of agency costs. As other studies show, it might be beneficial to also include other methods, such as measuring with discretionary expenses, Q Tobin or/and FCF to total assets. The second limitation is the industry selection. Even though there were as few discrepancies among the countries as possible, we still recognize some minor differences in the three samples.

Regarding further research, we think it would be particularly interesting to include more explanatory variables in the model, such as the ownership structure and mechanisms related to the CEO (Chairman/CEO duality, CEO tenure). Also, we would like to test the model which includes the new independent dummy variable – company's auditor. In addition to that, it is important to keep on investigating the agency cost effects in new countries, especially those with emerging markets. The inclusion of new countries and mechanisms will contribute considerably to the extension of the existing research on the relationship between agency costs and agency-mitigating mechanisms.

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