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VOLATILITY AND LIQUIDITY IN EASTERN EUROPE FINANCIAL MARKETS UNDER EFFICIENCY AND TRANSPARENCY CONDITIONS

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ABSTRACT. Following the consequences of the global financial crises, transparency and efficiency conditions of a local economic system have become important remedies for restoring of financial markets. This study provides measure of transparency and efficiency with correlation to liquidity and volatility and is taking into account the stock price reaction of emerging financial stock markets of Eastern Europe area and Turkey. We find that observed countries don't fully answer the expected sign of transparency, liquidity and risk measure, which meets the innovation from previous works (Berglöf, Pajuste, 2005). It raises doubts concerning functioning of legal basement in these countries and affects the decisions about investments. In line with previous research (Ivanov, Lomev and Bogdanova, 2012) our findings show that these countries don't prove to have certain transparency expectations, which could result in a limited access to market information and in a decrease of market efficiency.

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Introduction

Countries with emerging markets are trying to rebuild their economies according to developed market models and are becoming more attractive for investing and trading. According to Miyajima and Shim (2014) the total amount of Asset Under Management (AUM) by the largest 500 AMCs doubled from $35 trillion in 2002 to almost $70 trillion in 2012, more specifically, after Leham Brothers, the total AUM of EME equity and bond dedicated funds increased from $900 billion in October 2007 to $1.4 trillion in May 2014. However, emerging markets of Eastern Europe experienced influences of financial crises dramatically. Injured by consequences of financial crises then others. According to ECB

(2010) in Europe, the impact of the crisis varied across the countries (also varied the speed and the timing at which countries were affected) and coming from domestic demand, dependence from FDI, fiscal policy and external imbalances. Among the Eastern Europe countries, Poland has weathered the crisis relatively well, unlike the Baltic countries, Romania and Bulgaria.

When talking about the GDP growth (annual %), all observed countries showed a sharp reduction of this index in 2009, especially Ukraine, Turkey, Romania and Lithuania. In the end of the second wave of financial crises (2012), such countries like Estonia, Latvia and Lithuania demonstrated the highest GDP growth among the observed group. However, there are negative meanings of GDP growth in Czech Republic and Hungary, while other countries reduced their GDP down to the minimum but still positive meaning. Moreover, it led to a limited role of local firms in the efficient resource allocation in these countries. It is worth of saying that Eastern European emerging markets are very young and weak, hence, they are still trying to reach a decent level of efficiency, which is a key factor for investor's decisions. Eastern European markets are well-known for their lack of transparency and high level of corruption. However, exactly better transparency increases investor's desire to work with a certain country.

According to recent studies (Barth (2013), Francis and Huang (2009), Lang (2012), Jahanshad (2013)), transparency is meant to improve liquidity which in turn is crucial to deal with large quantities of securities very fast and with minimum costs. Moreover, timing of liquidity of Eastern European markets is very important due to possible illiquidity of stocks where they can become expensive to sell at the exact time suitable for investor. Liquidity uncertainty reflects in liquidity volatility, liquidity skewness, and extreme liquidity events which bring a negative image of a company and it reflects also on the whole local financial markets (Barth (2013), Lang (2011), Lang (2012)).

We agree with previous studies (Ang, Ciccone (2000), Lin (2014), Millar (2005)), that transparency is a timely and reliable increase of certain information which is open for investors. Its lack is seen as a limited access to information or even market efficiency failure and information disclosure. Country transparency can influence investment level in emerging markets and it is clear that less is invested in less transparent countries. Our research measures transparency of Eastern European financial markets in order to discover the relevance of transparency country level in attracting capital and in lowering volatility both in ordinary and financial crises times.

Therefore, *the research goal* is to investigate the relation between risk and liquidity, as well as transparency on financial market during crises period. In order to meet our research goal the following *research tasks* should be revealed: observation of market transparency in terms of liquidity and volatility measure, investigation of the transparency degree relates to risk measures, analysis of the negative effects on liquidity and risk measures due to recent global financial crises

This paper consists of following parts. Section 2 depicts the recent literature review on the research topic, giving the motivation of our research questions. Section 3 depicts data and methods used to define the every measure we did. Section 4 presents empirical results of our research. Section 5 provides summary conclusions and some policy implications.

1. Literature review

Due to globalization and track of time, emerging financial markets are getting bigger and more developed, therefore become more and more attractive for investors. Our work relates to a number of existing studies, as transparency is always seen as a treatment for problems in the financial system. It can be explained by dispersion of information among

market stakeholders and it is useful in providing most effective investment decisions. That's why more attention should be paid to transparency especially in emerging market economies of Eastern European countries.

Financial transparency according to Ang and Ciccone (2000) is defined as "the ability of market participants to form accurate assessments regarding a firm's current state and future prospects". Market participants base their judgments about the firm on the information concerning the cost of capital, future earnings, future cash flows, current firm value. They determine transparency by building a regression model first for each country and second for individual firms. The research uses two macroeconomic variables such as Gross Domestic Product (GDP) and the inflation rate.

Financial market transparency is also an important tool to evaluate the potential of any Eastern European company. Usually, firms with more transparent earnings enjoy a lower cost of capital and better liquidity level (Barth, 2013). The connection between firms with more transparent earnings and lower cost of capital is also investigated by Barth (2013) and shows its negative association. He also depicts that earnings transparency captures dimensions of cost of capital that the factors do not, indicates that earnings transparency is systematically related to the Fama-French and momentum factors, earnings transparency reflects information associated with expected cost of capital. The analysis is based on the explanatory power of the return-earnings regressions, relation between earnings and change in earnings is shown in cross-sectional regressions. The estimation of expected cost of capital is based on the Fama-French and momentum four-factor model.

Corporate transparency in emerging markets of Eastern Europe can be based on such factors as governmental, banking and other types of institutional transparency mechanism. This can lead to firms' voluntary disclosure if there is no mandatory disclosure. Previous studies (Berglöf, Pajuste, 2005) showed that the degree of market disclosure (annual reports) in Eastern European area exhibits a strong country effect, for example, Lithuanian and Polish companies tend to disclose less in their annual reports than Czech and Estonian companies. Authors build regression models in order to measure disclosure. First they analyzed and coded the information availability on company's websites, then, evaluated enforcement of mandatory disclosure rules and constructed an aggregate measure of ARDisclosure index.

Millar and others (2005) examine "the influence the business systems have on practices of corporate governance, where transparency is considered as the determinant of the success of corporate governance models". They suggest that institutional transparency is in close relation with information that is disclosed to a firm's stakeholders. Under the influence of globalization and in financial crises conditions such emerging markets should act rapidly and not to wait for new disclosure rules to appear and tell them how to give the relevant information to their stakeholders.

Recent investigations of financial crises consequences for Eastern European area showed that it brought conditions which will lead to more expensive and less available credit for both private and public sector, reduction of liquidity, capital flows back to the main financial centers, fall of stock markets and commodity prices and growth of risk (Dabrowski, 2010).

Market efficiency is characterized by security prices which reflect all available information at any period of time. Recent studies of Eastern Europe (Ivanov, Lomev and Bogdanova, 2012) proved that prices reflect all the publicly available information, which includes historical information, annual reports, and announcements. It suggests that prices don't fully reflect all the available public and private information and showed that Eastern European financial market is inefficient. They measure the probability of positive increments to be followed by positive and negative increments. Their second approach is based on back

Propagation Neural Networks as a method for increments sign forecasting. Authors use the R/Sn method based on the self-similar property of fractal process and build linear regression.

On the relationship between financial information transparencies with the corporate performance Jahanshad (2013) shows, in a merging market context, that the higher is performance of the company, the more transparent the financial information will be. The author measures transparency with the use of regression model which is built with a look on CIFAR models, Dipiazz model, Bushman, Piotroski and Smith's model, Standar and Poor's model.

Corporate transparency can also effect the resource allocation. Francis (2009) defines corporate transparency as "the availability of firm-specific information to those outside publicly traded firms". The author finds that transparency is positively associated with the correlation in industry-specific growth rates across country pairs and contributes to more efficient resource allocation. Moreover, he examines if growth stocks are comparable for countries with similar levels of economic development. The results show that the impact of corporate transparency on growth rates is greater for country pairs at similar levels of economic development. The author uses the extension of Fishman and Love's model in order to examine the relation between transparency and interindustry asset allocation. The model tests the role of corporate transparency in efficient resource allocation by examining whether co-movements in growth rates are associated with transparency levels.

Lin (2012) research shows that information transparency is positively related to idiosyncratic risk and to a company's credit rating but is unrelated to returns on convertible bonds. A company's credit rating (as a negative indicator of credit risk) is positively correlated with idiosyncratic risk, which means that when a better credit rating signals less credit risk, more idiosyncratic variance in the company exits. To test the interactive relation of information transparency, credit risk and idiosyncratic risk with convertible bond returns, the author uses the simultaneous equations model.

Transparency in Eastern European countries can become a key factor which influences the state of volatility of the financial stock market prices, where exchange rates, interest rates and stock indices can reflect the degree of risk measure. Volatility helps to understand the risk for financial market participants, depicts the size of changes on the market within a certain period of time. If volatility is low it shows that there are no rapid and dramatic fluctuations on the market.

Many papers confirm that the more transparent the firm of Eastern European area is the less fluctuations of volatility and little illiquidity it shows to investors. As measured by Lang (2011), a greater transparency is significantly associated with lower transaction costs and higher liquidity. The question is in what degree it can be fluctuated during the time of financial crises. For making the empirical test of liquidity, the author builds models which include controls for firm size, measured by the log of a firm's market value of equity, book-to-market, if a firm has a loss during the period, return variability. Moreover, two measures of liquidity and transaction costs are used: zero return days and bid-ask spreads, which are used as a proxy for transaction costs

Lang's (2012) investigation of the link between transparency and liquidity is made through examinations of the skewness of liquidity and their covariance with market liquidity and market returns, focusing on the country institutional environment and effect of crises periods. Such an approach allows to make some findings such as the negative correlation of liquidity volatility with transparency variables, few cases of extreme liquidity for stocks with greater transparency and the statement that transparent firms are less likely to be illiquid at inopportune times. During financial crises the negative relation between transparency and liquidity is much more significant. The author builds two panel data models, where the first one provides correlations between the liquidity covariance measures and other liquidity

variables, the second one shows correlation between transparency proxies and control variables.

Financial stock market liquidity can be studied on its relation to decisions made on the market. Lipson (2009) investigates how stock market liquidity affects corporate decisions and, thus, capital structure. He shows that firms with more liquid equity have lower leverage and tend to have equity financing. Stock market liquidity is measured by the use of Gibbs sampler estimate of the Roll trading cost measure with the use of stock returns, then, they use another liquidity measure by Amihud by calculating stock returns and trading volume, then, they measure a share turnover (from trading volume and shares outstanding) and quoted and effective spreads (from trade and quote data).

Information about transparency and market liquidity can seriously affect traders' behavior. Malinova (2013) depicts the influence of changes in transaction prices on traders' strategies which depends on a high quality of information for unfavorably informed investors and lower quality of information for favorably informed investors, so it is shown that the price impact of small trades in limit order markets is smaller than changes in transaction prices. The author uses a stylized model of security trading, where informed and uninformed traders trade a single security by submitting market orders. So, the liquidity providers post a series of limit buy and sell orders, where the former meets the bid prices and the latter ask-prices. So, the price efficiency measures the closeness of a price to the fundamental value of a security, then, the analyses of price efficiency on the properties of the expected price impacts and the closing prices is done.

Chan (2013) connects liquidity with volatility of underlying stocks which creates a higher selection risk because of an increased possibility of trading with informed investors and a higher inventory risk. It all brings a higher asset price volatility and hence, a lower asset liquidity. The authors use three liquidity measures by building standard regression models. The first one is the price-impact measure. They use the price and quote information to classify every trade as a buyer (seller) initiated and base it on whether the transaction price is greater (lower) than the prevailing average of bid and ask quotes. Second liquidity measure is the effective bid-ask spread and it shows that bid-ask spread includes the adverse selection cost of the market maker trading with investors with superior information. The third liquidity measure doesn't rely on trade transaction data. When the stock is less liquid these measures characterize illiquidity measure and a higher bid-ask spread. The order flow will impact on stock prices a lot and will change the absolute price per unit. The author states that the increase in any of these measures signifies lower liquidity.

Sujan N. and Govil M. (2013) study systematic and unsystematic risk as components of a total risk and state that the more stable return leads to less risk. They study if systematic risk can be reduced by further diversifying across nations whose economic cycles are not perfectly in sync. Their research use Markowitz model in order to show the benefits of international diversification.

2. Data and Method

The research measures liquidity and volatility in their relation to financial markets of Eastern Europe Area. In particular we investigate stock price reaction in 9 countries (Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Turkey, and Ukraine). We have excluded Russia because its local economy is quite different from that of other peer group country since by some years the country belongs to BRIC area, Slovenia and Bulgaria due to different extension or soundness in time series recorded in the World Bank Database. From Bloomberg, we drew daily observations of stock price of 167 listed companies belonging to Blue chip Stock index of 8 countries in Eastern Europe Area and Turkey, for the

sample period January 2003 – April 2015. On the whole, our pooled regression models include 35136 observations. According to previous literature As for liquidity and risk variables, previous scholars tackled identical metrics to those we took into account in this research (see Chan *et al.*, 2013, Francis *et al.*, 2009, Lipson *et al.*, 2009 and Lin *et al.*, 2014), for transparency variables, unlike other authors, we considered a public database, that is World Bank data System. Within this 2300 socio-economic development measure database and after one-for-one checking, our final choice is represented by variables which we considered ultimately. We focus on a public database, because this way everyone has an access to a particular driver magnitude for a specific country by simply drawing data from the iWorld Bank data public depositary. We use 9 indices for measurement of efficiency and transparency. Moreover, we split Local Efficiency Conditions into two components: Economic Efficiency and Legal Efficiency.

Index1 stands for business extent of disclosure (0=less disclosure, to 10=more disclosure), index 2 means depth of credit information (0=low, to 8=high) and index 3 stands for private credit bureau coverage (% of adults). Index 4 stands for ease of doing business (1=most business-friendly regulations, to 189 – the weakest), index 5 – time to resolve insolvency (years), index 6 – strength of legal right (0=weak, to 12=strong), index 7 – cost of business start-up procedures (% of GNI per capita), index 8 – time required to start a business (days), index 9 – Start-up procedures to register a business (number). In order to achieve the most effective results of our measure, we divided indices in three groups according to their mission. Hence, legal efficiency are defined by indices 5, 6, transparency – indices 1, 2, 3, economic efficiency – indices 4,7,8,9. Our research covers a sample period, ranging from January 2003 to April 2015; moreover, according to Fiordelisi et al (2014), we also focus on two recent crisis periods. Global financial crisis denotes the period between 15th September 2008 and 1st May 2010 (dummy_crs1) while Sovereign debt crisis denotes the period between 2nd May 2010 and 30th June 2012 (dummy_crs2). All economic data is drawn from the World Bank Database while stock price and micro-economic control variables are downloaded from Bloomberg. We investigate the relationship between Liquidity, Volatility, Transparency and Local economic system efficiency. The econometric method which is used according to a huge number of previous empirical papers – eg. Barth *et al.* (2013), Chan *et al.* (2013) and Lang *et al.* (2011) – is a panel (pooled) model. We put year dummies for clustering error and for getting a year fixed effects model in order to avoid the serial correlation. This allows us to estimate the model with OLS.

Thus, we select all stocks belonging to local market general index for 9 countries and we run 4 models as follows:

$$Mod1: \quad AvBidAsk_{i,t} = \alpha + \sum_j \beta_j x_{j,i,t} + \sum_j \lambda_j W_{j,i,t} + \sum_k \gamma Stage_{k,i,t} + \varepsilon_{i,t} \quad (1)$$

$$Mod2: \quad Volume_{i,t} = \alpha + \sum_j \beta_j x_{j,i,t} + \sum_j \lambda_j W_{j,i,t} + \sum_k \gamma Stage_{k,i,t} + \varepsilon_{i,t} \quad (2)$$

$$Mod3: \quad Syst_{i,t} = \alpha + \sum_j \beta_j x_{j,i,t} + \sum_j \lambda_j W_{j,i,t} + \sum_k \gamma Stage_{k,i,t} + \varepsilon_{i,t} \quad (3)$$

$$Mod4: \quad UnSyst_{i,t} = \alpha + \sum_j \beta_j x_{j,i,t} + \sum_j \lambda_j W_{j,,i,t} + \sum_k \gamma Stage_{k,i,t} + \varepsilon_{i,t} \quad (4)$$

where $AvBidAsk_{i,t}$ is the average of the Bid Ask Spread for i-th Stock, difference in price between the highest price that a buyer is willing to pay for an asset and the lowest price for which a seller is willing to sell it, $Volume_{i,t}$ accounts for the total number of shares traded on a security i on the current day; $Syst_{i,t}$ stands for Systematic risk, also known as "undiversifiable risk", affecting the overall market, not just a particular stock or industry; $UnSyst_{i,t}$ stands for Unsystematic risk, also known as "nonsystematic risk", or "specific risk", or also "diversifiable risk" because it can be reduced through diversification. Following

Damodaran's approach (1999), we use the following formula to determine the systematic risk for i-th securities:

$$\text{syst}_i = \beta_i * \sigma_{mkt}$$

Where syst_i is the systemic risk for i-th security, σ_{mkt} the standard deviation of market return, β_i is the Beta regression (OLS method) calculated as:

$$r_i = \alpha_i + \beta_i r_{mkt}$$

where $r_i$is the return of i-th security and r_{mkt} the return of market. The unsystematic risk is obtained as:

$$\text{unsyst}_i = \sqrt{\sigma_i^2 - \text{syst}_i}$$

where σ_i^2represented the variance of the return of i-th security, $x_{j,i,t}$ is a vector of variables representing both Economic Efficiency and Transparency conditions of a country area, $W_{j,i,t}$ is a set of control variables accounting for the level of Profitability (ebit, epsgrowth, grossmargin, returnonasset, returnoncamp, returncomeqy), Leverage (curratio, ltbtbt) and Size (cormarcap, currentpval) of each i-th stock taking into account. In particular, ebit means earnings before interest expenses and income taxes; epsgrowth represents the percentage increase or decrease of earning before extraordinary items by comparing current period with same period of a prior year; grossmargin represents the percent of total sales revenue that the company retains after incurring the direct costs associated with producing the goods and services sold by a company; returnonasset stands for ROA, returnoncamp is a metric that measures the return that an investment generates for capital contributors; returncomeqy is a measure of a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested; curratio stands for the Current Ratio, ltbtbt stands for all interest-bearing financial obligations that are not due within a year; cormarcap represent the current market capitalization; currentpval is a measure of a company's theoretical takeover price. Lastly $\text{Stage}_{k,i,t}$ is a set of dummy variables indicating different stages of the financial crisis. Because some independent variables might be persistent over time, we also include year dummies to capture any fixed effect within the year and cluster standard errors by year in each regression. In *Table 1* we report the expected sign of the coefficient of each covariate with respect to target variable. Particularly, *Table 1* shows what we would have expected while the results in *Tables* from *3* to *7* (especially those summarized in *Table 3*) demonstrate what we actually found.

Table 1. Stock Price Reaction – Coefficient Expected Signs

	Average_bid ask spread	Volume	Systematic risk	Unsystematic risk
1	2	3	4	5
Index1. Business extent of disclosure (0=less disclosure, to 10=more disclosure)	-	+	-	-
Index 2. Depth of credit information (0=low, to 8=high)	-	+	-	-
Index 3. Private credit bureau coverage (% of adults)	-	+	-	-

1	2	3	4	5
Index 4. Ease of doing business (1=most business-friendly regulations, to 189-the weakest)	+	-	+	+
Index 5. Time to resolve insolvency (years)	+	-	+	+
Index 6. Strength of legal right (0=weak, to 12=strong)	-	+	-	-
Index 7. Cost of business start-up procedures (% of GNI per capita)	+	-	+	+
Index 8. Time required to start a business (days)	+	-	+	+
Index 9. Start-up procedures to register a business (number)	+	-	+	+

Source: Author's elaboration.

Table 2. Descriptive Statistics – Overall Mean 2003-2014

	Transparency			Economic Efficiency				Legal Efficiency	
	Business extent of disclosure index (0=less disclosure to 10=more disclosure)	Depth of credit information index (0=low to 8=high)	Private credit bureau coverage (% of adults)	Cost of business start-up procedures (% of GNI per capita)	Ease of doing business index (1=most business-friendly regulations)	Start-up procedures to register a business (number)	Time required to start a business (days)	Strength of legal rights index (0=weak to 12=strong)	Time to resolve insolvency (years)
BGR	10.0	4.4	2.8	4.5	37.0	6.6	26.4	9.0	3.3
CZE	2.0	5.3	63.7	9.2	45.5	9.4	24.9	6.4	5.8
EST	8.0	5.4	23.4	3.4	16.5	5.3	22.0	6.5	3.0
HUN	2.0	3.9	21.0	15.2	56.0	4.8	19.0	7.2	2.0
LVA	5.0	2.4	0.0	3.9	22.0	4.7	15.2	9.8	2.5
LTU	5.8	5.5	42.2	2.5	24.0	6.5	21.3	5.2	1.8
POL	7.0	5.7	63.1	17.2	31.0	7.7	36.6	8.2	3.0
ROU	8.9	4.2	26.0	4.3	49.0	5.3	12.9	8.9	3.7
RUS	6.0	3.5	22.6	4.1	63.0	8.0	26.5	4.8	2.0
SVN	3.6	1.2	36.3	4.9	48.5	5.3	29.6	4.2	2.0
TUR	8.7	5.0	38.1	19.5	53.0	6.7	8.7	4.6	3.3
UKR	2.8	2.4	12.1	8.1	104.0	10.3	28.1	8.5	2.9

Source: Author's elaboration with data from World Bank Data System, January 2003 – December 2014.

3. Empirical Results

Results are summarized in tables from 4 to 7, according to each measures of Liquidity and Volatility investigated coupled to specific sets of Efficiency and Transparency and control metrics.

Average bid ask spread. We measured *average_bid ask spread* and *price volume* in order to define the state of Liquidity assets and *systematic* and *unsystematic risks* in order to

define Volatility level in East Europe area countries. *Average_bid ask spread* measure is used to reveal the difference between the highest price a buyer is willing to pay for an asset and the lowest price a seller is ready to sell his asset. In order to test the coverage of this coefficient in East Europe area countries, first we tested it in frames of its legal and judicial validity. Legal efficiency indices showed negative response in time to resolve insolvency and no reaction in strength of legal efficiency. Time to resolve insolvency shows negative value meaning which doesn't answer the expected sign. The respect of following the strength of legal efficiency is seen only in Ukraine, where it answers the expected sign. Efficiency indices show the following results. Depth of credit information index displays the negative reaction in all countries except Turkey and Latvia. The private credit bureau coverage has fully positive reaction which doesn't answer the respected sign at all. Transparency indices show positive response of variables of business extent of disclosure, mixed effect mostly with statistical significance for other indices. We can observe a positive meaning of biggest business disclosure coefficients in Ukraine, Latvia, Poland and negative one in Czech Republic. There is a positive meaning of ease of doing business in such countries like Estonia and Ukraine, which doesn't answer the expected sign, and negative meaning of this coefficient in all other observed countries. The respect of the required sign of cost of business start-up procedures is done in all observed countries except Ukraine. We observe the mixed effect of a time required to start a business with positive response in Poland, Romania and Turkey, which doesn't answer the expected sign. There is an absence of respect of coefficient of start-up procedures to register a business (number) in Poland, Romania and Ukraine. The ability to pay short-term obligations (current ratio) showed the bad condition of financial health of the countries during the crises period which led to very low meaning of the coefficients. The lowest ability to pay obligations is seen in Hungary and Poland. Only Czech Republic showed a normal level of its capacity to pay for obligations. Indicators of profitability showed the highest results in Czech Republic, Hungary and Poland, which displays their capacity to overcome financial crises period at the highest level among the observed countries. The observation of dummy_crs1, dummy_crs2 showed that for both crises periods on average we have more negative coefficients than positive, underlying that during turmoil periods we observe a reduction in bid ask spread and consequently an improve in market liquidity conditions. Particularly interesting is the high magnitude of Latvia and Ukraine coefficients. The effect of current market capitalization in Eastern Europe show on average very low relation with no statistical significance of strength of legal efficiency. Looking at control variable results, related to firm leverage level, long term debt and current ratio, we observe a predominance of coefficient with negative sings and exhibiting statistical significance. This evidence means that standard logic in interpreting coefficients is not fully applicable in this context. The observed current ratio is mainly negative in case of legal rights and efficiency measure and is zero for transparency. This result could confirm the weak financial health in the observed countries and growth of firm debt level. Long term debts variables are zero for legal rights and efficiency measure, so they have no effect on the observed indices. Long term debt in case of transparency measure is negative, so it results in decrease of average_bid ask spread. Earnings before interest and tax, and earnings per share variables are zero for all measures that shows no influence on average_bid ask spread and, hence, on liquidity. Only 4 variables out of 6, such as grossmargin, returnonasset, returnoncamp, returncomeqy, have the evidence of statistical significance and are positively related. They showed the low but still positive level of firms' profitability in Eastern Europe, it also reflects a small increase of average_bid ask spread and thus, illiquidity.

Our measure of average_bid ask spread showed the highest Adjusted R-square in Turkey (0,57), Ukraine (0,47) and Romania (0,41) with the lowest meaning in Lithuania (0,10).

Price volume. Control variables related to Price volume demonstrated the following impact on Liquidity. Legal efficiency indices showed more negative effect of coefficient of time to resolve insolvency (years), no statistical significance with decline from the expected sign of the strength of legal efficiency in Poland and Romania. Efficiency indices demonstrated more negative effect of the depth of credit information and more positive reaction of the private credit bureau coverage. Transparency indices proved that only Hungary, Lithuania and Ukraine answer the expected sign of the meaning of biggest business disclosure, showed mixed effect of indices ease of doing business and cost of business start-up procedures, demonstrated no statistical significance with mixed effect for majority of countries when measuring time required to start a business, no reaction or positive reaction when the expected sign is negative in Latvia, Lithuania, Romania, Ukraine. Start-up procedures to register a business (number) show mixed effect with no answer to expected sign in Latvia, Lithuania, Romania, and Ukraine. Dummy_crs1, dummy_crs2 show no change in the results of these coefficients due to financial crises consequences. Variable current capitalization is highly positive and reflects that higher size of a company is related to an increase of liquidity level in terms of Volume of share traded, in the East Europe area market. Current enterprise value and current ratio are negative. Long term debt in case of legal rights and transparency is negative, when it is positive for efficiency measure. It shows that a debt increase in the company listed in East Europe area markets is coupled to a decrease in Liquidity market level as expected. Earnings before interest and tax are positive, which mean an increase of profitability conditions of firm is related to an improvement of liquidity conditions of their stocks. Profitability variables (returnonasset, returnoncamp, returnonsset, epsgrowth are positive and statistically significant. Two of profitability indices (grossmargin and returncomeqy) are negative which reduces the liquidity of East Europe area markets. Our measure of price volume showed the highest Adjusted R-square in Latvia (0,42), Poland (0,38), Hungary (0,37) and the lowest in Romania (0,13) and Turkey (0,14).

Systematic risk measure demonstrated the following impact on Volatility. Legal efficiency indices show that only the meaning of time to resolve insolvency (years) of Latvia doesn't answer the expected sign. Strength of legal efficiency has mostly positive response except of Poland and Turkey, which doesn't answer the expected sign. Efficiency measure of depth of credit information showed no statistical significance, only the meanings of Czech Republic and Estonia meet the expected sign. We observe mostly negative signs for the coefficients of private credit bureau coverage. Transparency measures reflected mixed effect of business disclosure, ease of doing business and cost of business start-up procedures and they are mostly negative according to the expected sign, indices of time required to start a business and start-up procedures to register a business are mixed with high statistical significance. Observation of dummy_crs1, dummy_crs2 didn't really affect results of coefficients. Test of market capitalization, current value, long term debt (except positive meaning for transparency), epsgrowth showed their negative or zero meaning which show no respect of expected sign and no effect on legal and economic efficiency and transparency variables. Current ratio is negative. Profitability indices show statistical significance and are positively related, while earnings before interest and tax, as well as epsgrowth, have zero or negative meaning. That signifies about the mixed effect of profitability variables and raises the risk level on the East European financial market. Our measure of systematic risk demonstrated the highest Adjusted R-square in Hungary (0,55) and the lowest in Poland (0,07) and Turkey (0,04).

Unsystematic risk. Results show that time to resolve insolvency (years) showed on average no significance response (positive expected sign has found in Latvia). Strength of legal efficiency index has positive meanings in Poland and Turkey when unexpected sign is negative. Efficiency indices showed a total puzzle of depth of credit information and index

private credit bureau coverage, where the majority of countries don't answer the expected sign at all. Transparency indices demonstrated mostly positive effect of business disclosure (except Czech Republic). Ease of doing business and cost of business start-up procedures have mixed effect, while time required to start business and Index 9 start-up procedures to register business are mostly negative with statistical significance. Dummy_crs1, dummy_crs2 don't have a lot influence on observed coefficients as it was expected by checking from previous results. Size variables of current market capitalization, current value, and debt variable, ebit and other profitability variable as epsgrowth and ebit show zero effect, thus, they cause no effect on East Europe area financial market risk level. Current ratio and long term debt are negative with statistical significance. Variable returnonasset is negative with statistical significance, while other profitability variables such as grossmargin, returnoncamp, returncomeqy are positive with statistical significance, which it tells about growth of risk on East Europe area financial market, shows the influence on raise in volatility, proves that unsystematic risk doesn't depend on size of a company in Eastern Europe. The highest meaning of unsystematic risk Adjusted R-square is in Romania (0,39) and the lowest in Turkey (0,05) and Poland (0,06).

To summarize the research it can be said that the situation on East Europe area financial markets is very chaotic and out of control. In particular most of the variables are out of expected frames of their significance. The time every of the observed countries respects an expected sign and has statistical significance is shown in the *Table 2*. As we can see by looking at results connected to *average_bid ask spread*, the majority of control variables related to the average levels of bid ask spread are not effective in the observed Eastern European countries, meaning a potential reduction in their financial and liquidity conditions. Business extent of disclosure is at a very low level and is respected only in Czech Republic, when other countries show no respect of an expected sign as well as statistical significance. None of the observed countries has business friendly regulations to cut the difference in prices that buyers are ready to pay for the highest and sellers are ready to sell the lowest. We expected to have positive response to legal efficiency index, but unfortunately the results showed that only Ukraine answers the proposed sign in terms of bid_ask spread variable. Four countries out of nine (Czech Republic, Estonia, Poland and Ukraine) provide the decent conditions of depth of credit information and prove it by respect of the expected sign and statistical significance. None of the countries showed a positive response to the expected sign of private credit bureau coverage and ease of doing business in the country. Moreover, the cost of business in the observed countries is out of any expected measure, except Ukraine. In addition countries don't respect the expected sign in terms of time of doing business coefficient, except Romania and Turkey, which show statistical significance and answer the expected sign. Start-up procedures to register business are more or less suitable in Romania, where the index is positively related with statistical significance. Therefore, the results of an average_bid ask spread measure means that financial market of Eastern European countries is not attractive for investors at all, has low level of profitability and can't guarantee normal business conditions for development and functioning. However, we can see a very low but still positive match in frames of expected sign in Romania and Ukraine. The evidence of *price volume* variables shows that there is a huge gap between stocks' demand and supply in East Europe area countries. However, as we can see from *Table 2* only Hungary and Romania show the most respect of expected signs. Ukraine shows a decent level of business extent of disclosure index with statistical significance. Only one country out of nine (Czech Republic) has positive response of business friendly regulations index with statistical significance. Unfortunately legal efficiency impact in term of price volume show little respect of an expected sign in Poland and Romania, but without any statistical significance. The evidence tells that the depth of credit information has the most suitable meaning in Lithuania with

statistical significance. Private credit bureau coverage is respected in four countries out of nine but is characterized by statistical significance only in Hungary. Ease of doing business shows mixed response to an expected sign without statistical significance. The cost of business is mostly available in Romania. However, the research shows quite a decent respect of expected time of doing business in a country with most suitable conditions (statistical significance) in Hungary, Poland and Ukraine. Start-up procedures show no statistical significance in the observed countries. Hence, the results of price volume measure showed that countries meet the expected sign very chaotically which rather reduces than increases liquidity level. Anyway, the minimum required level of the expected coefficients is met in Hungary, Lithuania and Ukraine. The evidence of *systematic risk* measure makes the following statements about volatility effects (*Table 2*). The risk of business extent of disclosure is answers the expected criteria in most of the countries but is statistically significant only in Estonia and Lithuania. Business friendly regulations are statistically significant only in Czech Republic. Unfortunately, as we can see, legal efficiency issues of systematic risk are not statistically significant in any country but answer the expected sign only in Hungary and Ukraine. The depth of credit information doesn't show any suitable meanings with statistical significance in these countries, but has positive response to the expected sign in Czech Republic and Romania. That means that there is a low availability of credit information in Eastern European countries to facilitate lending decisions. We can see that the number of individuals or firms listed by a private credit bureau with current information on repayment history, unpaid debts, or credit outstanding answers the expected sign in most of the countries, but has statistical significance only in Estonia, Hungary, and Ukraine. The regulatory environment is not well-conducive to business operations in East Europe area countries generally, but we can see some positive and statistically significant response in Lithuania and Turkey. The cost of business in systematic risk measure shows its low availability in the observed countries, where it respects the expected sign and is statistically significant only in Hungary, Turkey and Ukraine. Also, generally speaking, we can see a sound effect related to the time of doing business Index, with most suitable statistical significant meanings in Czech Republic and Lithuania. Start-up procedures in East Europe area countries are pretty hard with respect of expected sign and they show a statistical significance only in Hungary and Latvia. So, the overall evidence shows the existence of quite high volatility level and that a quite relevant market risk affects in Eastern European countries, which displays high uncertainty on the entire market, with some better conditions in Estonia and Lithuania. The evidence of *unsystematic risk* control variables illustrates the following influence on volatility (*Table 3*). The risk of business extent of disclosure has negative meaning only in Estonia, when business friendly regulation which can affect a limited number of assets has correlation with expected sign and is statistically significant only in Romania. Most of the countries respect legal right effects in case of diversifiable risk with statistical significance in Estonia. The depth of credit information gets negative response in most of the countries, shows its low level, however, is statistically significant only in Estonia. The private credit bureau coverage meets the necessary minimum requirements in Poland, Romania and Ukraine. Some the countries show a decent minimum level of regulatory environment to business operations, but it is statistically significant only in Czech Republic and Romania. The cost of business in terms of unsystematic risk is still not suitable in most of the countries with an exception in Lithuania and Turkey, where it is characterized as statistically significant. Start-up procedures demonstrate a positive statistically significant effect only in Hungary. As we can see, Eastern European financial markets in terms of unsystematic risk measure express their uncertainty and almost no match of the minimum requirements of their indices, with the more or less suitable situation in Romania and Turkey.

So, the evidence of our research confirms the previous liquidity and risk studies (Dabrowski, 2010), proving the inefficiency of East Europe area financial markets (Ivanov, Lomev and Bogdanova, 2012), goes with the statement that financial markets of Eastern Europe are influenced by a strong country effect (Berglöf, Pajuste, 2005).

Table 3. Summarize Results – Times a country respects a sign and has statistical significance

Variable	Czech Republic	Estonia	Hungary	Latvia	Lithuania	Poland	Romania	Turkey	Ukraine
Respect of expected sign*									
Average_bid_ask_spread	2 (9)	1 (9)	0 (9)	0 (9)	1 (9)	2 (9)	2 (9)	1 (9)	4 (9)
Price volume	3 (9)	3 (9)	6 (9)	1 (9)	3 (9)	4 (9)	5 (9)	1 (9)	4 (9)
Systematic Risk	5 (9)	3 (9)	4 (9)	3 (9)	2 (9)	5 (9)	2 (9)	2 (9)	5 (9)
Unsystematic risk	5 (9)	4 (9)	3 (9)	2 (9)	1 (9)	6 (9)	7 (9)	2 (9)	5 (9)
Statistical significance and respect of an expected sign*									
Average_bid_ask_spread	1 (9)	1 (9)	0 (9)	0 (9)	0 (9)	0 (9)	2 (9)	1 (9)	3 (9)
Price volume	1 (9)	0 (9)	2 (9)	0 (9)	2 (9)	1 (9)	1 (9)	0 (9)	2 (9)
Systematic Risk	2 (9)	6 (9)	5 (9)	1 (9)	6 (9)	1 (9)	0 (9)	5 (9)	5 (9)
Unsystematic risk	2 (9)	3 (9)	4 (9)	3 (9)	4 (9)	4 (9)	8 (9)	5 (9)	3 (9)

Source: Author's elaborate*in round parenthesis there is the total number of cases.

Conclusion, Policy Implications and Further Research

In modern conditions emergent markets are getting more and more weight in the world economy. The increased attention to East Europe area and Turkey financial markets is explained by their dynamic development and less strict local mechanisms of their regulation.

Our testing proved that Eastern Europe markets show little respect of expected direction in the relationship with a number of indices of Transparency and Efficiency in the meaning of a Liquidity and Volatility Analysis. Financial markets of East Europe suffer and, in general, show little reaction on influence of many economic and micro-economic indicators. Indeed our attempt to measure Transparency of East Europe area markets revealed a very chaotic and instable picture. This puzzle situation contributes to low Liquidity and high Volatility levels, coupled with weak financial markets and hard conditions for doing business in a large part of these countries, which results in almost insuperable barriers of doing business.

To summarize, the evidence of our research confirms previous liquidity and risk studies (Dabrowski, 2010), proving the inefficiency of East Europe area financial markets (Ivanov, Lomev and Bogdanova, 2012), goes with the statement that financial markets of Eastern Europe are influenced by a strong country effect (Berglöf, Pajuste, 2005). However, exactly strengthening of economic and legal basis could probably increase the level of financial market transparency in Eastern Europe and reduce broad risk conditions.

Lastly, we close the section giving some comments on policy implications of our findings. We have already written that overall evidences give a puzzle picture of the relationship between Transparency and Efficiency on the one hand, and Liquidity and Volatility on the other. We face it because most of expected relationships among dependent and explanatory variables are not in line with the common economic rationale. A quick look at the results showed in *Table 2* does confirm our saying. This puzzle situation makes it difficult to identify an effective action by local policy makers in contrast to conditions of illiquidity and containment of local financial market risks. In fact, such action on

Transparency appears to be effective about half the cases in order to improve the liquidity conditions.

With regard to liquidity particularly, improvement of conditions of legal efficiency in terms of effectiveness of legal system (proxied by index 5) or strengthening of legal rights (proxied by index 6) does not involve an enhancement of liquidity conditions. Indeed, acting on this last component seems to be particularly irrelevant. When looking at coefficients, it looks like the best way to progress liquidity conditions is acting on conditions at the bottom of ease of doing business index, involving reduction in the bid-ask spread and expanding the stock volume. While operating on conditions of economic system efficiency – excluding the cost reduction of business start-ups that looks particularly effective in Turkey and Ukraine – doesn't seem to cause any significant benefits.

Risk evidence is only a little bit less obscure. With regard to Systemic risk particularly, lowering the time to resolve insolvency could involve a strong improvement of local financial markets risk level only in Czech Republic. To improve Transparency and, in particular, the extension of private credit bureau coverage, which would cause benefits to risk conditions for local financing markets in Estonia, Hungary and Ukraine, seems to be a more effective policy action. Moreover, an increase of Transparency in terms of index 1 (business extent of disclosure) would cause benefits to risk levels in Estonia and Lithuania. Generally speaking, the best benefits for Systematic risk are related to intervention on the conditions of efficiency of broad economic system. In fact, you could gain in reduction of Systematic risk by acting on all four components taken into consideration. Following actions can be done: improvement of ease of doing business conditions in order to better financial markets in Estonia, Hungary and Ukraine; lowering cost of business start-up procedures, which is particularly effective for Turkey and Ukraine; reduction both of time required to start a business and start-up procedures to register a business which will put a restrain in risk levels of local financial markets in Czech Republic, Lithuania, Romania, and Hungary. When we considered Unsystematic risk results, it showed that acting on this dimension could be more difficult than performing on Systemic risk, at least, with regard to conditions of Legal efficiency and Transparency (in the latter case, improvements could be gained by taking action on index 3 for Poland, Romania and Ukraine). The straightest way to lower local risk levels, like in the case of Systemic risk, is modifying the conditions of economic efficiency. In particular, the greatest potential benefits would occur to Czech Republic intervening on index 7 and to Hungary when improving index 9.

Lastly, it seems to be natural to stress that our assumptions, particularly in identifying the relationship between proxy of Liquidity, Transparency, Risk levels and Efficiency, are crucial in obtaining results and in their interpretation.

Regarding to empirical evidences on the whole, this is the first work in the research stream of transparency and liquidity condition effects on local financial markets of the Eastern Europe area. Apart from this, we believe it is not trivial that we have shown that for the area investigated there is no sound relationship among efficiency and transparency conditions from one side and liquidity and riskiness from the other. This evidence is meaningful mostly because of the fact, that several of these countries (please, check variables in the *Table 2*) are considered not so trustworthy under the perspective of advanced economies commercial standard conditions of good and services trading. In this regard, we find no sound relationship among local market transparency and efficiency conditions and financial market liquidity and riskiness settings. This evidence appears to suggest that there are ample opportunities for increasing the commercial standard quality level. In fact, for those countries, whose statistical reliability in commercial issues of transparency, effectiveness of economic conditions and market liquidity demonstrate particular situations of weakness, there are many chances for a significant improvement. It can be exploited by the local policy maker

for the benefit of both local systems and a high level group like the EU. This last consideration suggests further research in this area. It is particularly aimed to explore drivers of efficiency, transparency and liquidity others than those, we have considered here. To summarize, we believe that this line of research is worth to carry on, especially, in the light of the weaknesses highlighted during the recent market turmoil, as the future of Europe is first of all driven by a better integration of countries residing on the east border.

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Annex

Tab. 4. Liquidity – Bid_Ask Spread – Overall Sample – Eastern Europe Country and Turkey – Sample Period 2003 to 2014

	Czech Republic		Estonia		Hungary		Latvia		Lithuania		Poland		Romania		Turkey		Ukraine	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Panel A – Legal Efficiency	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Err.
Index 5	-0,02***	0,01	0	(omitted)	0	(omitted)	-2,01***	0,56	0	(omitted)	0	(omitted)	-0,07***	0,02	0	(omitted)	0	(omitted)
Index 6	0	0,01	0	0,02	0,01	0,01	0	0,05	0,01	0,05	0,01	0,36	0	0	0	0	-0,87***	0,1
cormarcap	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
currentpval	0	0	-0,01**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
curratio	0,03	0,02	-0,06*	0,03	-0,07***	0,02	0,03***	0,01	0,04	0,03	-5,26***	1,01	-0,08***	0,01	0	0	0,03	0,17
ltbtbt	0,01***	0	-0,01***	0	0	0	0,01	0,01	0	0	-0,54***	0,09	0,01***	0	0	0	-0,02	0,02
ebit	0	0	0	(omitted)	0	0	0	0	-0,02	0,02	-0,02***	0	0	0	0	0	0	0
epsgrowth	0	0	0	0	0	0	0	0	0	0	0,01***	0	0	0	0	0	0	0
grossmargin	0	0	0	0	0	0	0	0	0.01**	0	0,93***	0,05	0	0	0	0	0,01	0,02
returnonasset	0	0	-0,04***	0,01	0,03***	0	-0,16***	0,04	0	(omitted)	1,52***	0,27	0,02***	0	0	0	0,03***	0,02
returnoncamp	0	0	-0,01***	0	0,02***	0	-0,14***	0,02	-0,01	0,01	-0,23**	0,11	0,01***	0	0	0	0,09***	0,01
returncomeqy	0	0	0,01**	0	-0,01***	0	0,12***	0,02	-0.01***	0	-0,12	0,12	-0,01***	0	0	0	-0,01***	0,01
Dummy_crs1	0	0,07	-0,43**	0,17	-0,19*	0,1	-2,95***	0,65	-0.86***	0,3	2,66	3,52	-0,05*	0,03	-0,01	0,01	-2,61***	0,89
Dummy_crs2	0,16**	0,07	-0,72***	0,16	0,29***	0,1	-6,08***	0,63	-1.49***	0,29	-0,63	3,39	0,02	0,03	-0,01	0,01	-5,23***	0,86
Years Effect	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Panel B – Transparency																		
Index 1	-0,01	0,03	0,33***	0,02	0,11**	0,05	0,68***	0,17	0.36***	0,04	0,53	0,39	0	0	0,05***	0	7,49***	0,24
Index 2	-0,07**	0,03	-0,24***	0,04	0	0,02	1,28***	0,11	-0,02	0,05	-3,05*	1,58	0	0,01	0,08***	0	-1,59***	0,24
Index 3	0,01***	0	0,13***	0,01	0	0	0	(omitted)	0.03***	0	0,33**	0,14	0	0	0	0	0,74***	0,04
cormarcap	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
currentpval	0	0	-0,01**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
curratio	0,03	0,02	-0,06*	0,03	-0,07***	0,02	0,03***	0,01	0,04	0,03	-5,26***	1,01	-0,08***	0,01	0	0	0,03	0,17
ltbtbt	0,01***	0	-0,01***	0	0	0	0,01	0,01	0	0	-0,54***	0,09	0,01***	0	0	0	-0,02	0,02
ebit	0	0	0	(omitted)	0	0	0	0	-0,02	0,02	-0,02***	0	0	0	0	0	0	0
epsgrowth	0	0	0	0	0	0	0	0	0	0	0,01***	0	0	0	0	0	0	0
grossmargin	0	0	0	0	0	0	0	0	0,01**	0	0,93***	0,05	0	0	0	0	0,01	0,02
returnonasset	0	0	-0,04***	0,01	0,03***	0	-0,16***	0,04	0	(omitted)	1,52***	0,27	0,02***	0	0	0	0,03***	0,02
returnoncamp	0	0	-0,01***	0	0,02***	0	-0,14***	0,02	-0,01	0,01	-0,23**	0,11	0,01***	0	0	0	0,09***	0,01
returncomeqy	0	0	0,01**	0	-0,01***	0	0,12***	0,02	-0,01***	0	-0,12	0,12	-0,01***	0	0	0	-0,01***	0,01
Dummy_crs1	0	0,07	-0,43**	0,17	-0,19*	0,1	-2,95***	0,65	-0,86***	0,3	2,66	3,52	-0,05*	0,03	-0,01	0,01	-2,61***	0,89
Dummy_crs2	0,16**	0,07	-0,72***	0,16	0,29***	0,1	-6,08***	0,63	-1,49***	0,29	-0,63	3,39	0,02	0,03	-0,01	0,01	-5,23***	0,86
Years Effect	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Panel C – Economic Efficiency																		
Index 4	-0,01***	0	0,12***	0,01	-0,02***	0	-0,07***	0,03	-0,14**	0,06	-0,43***	0,15	0	0	0	0	0,19***	0,01
Index 7	-0,22***	0,04	-0,15*	0,08	0	0	-0,42***	0,11	-0,17	0,18	-2,78**	1,2	-0,03***	0,01	-0,03***	0	0,28***	0,08

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Index 8	0	0	0	0,01	0	0	0	(omitted)	-0,16*	0,08	0,14	0,16	0,01**	0	0,01***	0	-0,64***	0,15
Index 9	0	(omitted)	0	(omitted)	-0,61***	0,07	-5,36***	0,77	-0,38*	0,21	0,38	1,76	0,08***	0,03	0	(omitted)	0,06	0,16
cormarcap	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
currentpval	0	0	-0,01**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
curratio	0,03	0,02	-0,06*	0,03	-0,07***	0,02	0,03***	0,01	0,04	0,03	-5,26***	1,01	-0,08***	0,01	0	0	0,03	0,17
ltbtbt	0,01***	0	-0,01***	0	0	0	0,01	0,01	0	0	-0,54***	0,09	0,01***	0	0	0	-0,02	0,02
ebit	0	0	0	(omitted)	0	0	0	0	-0,02	0,02	-0,02***	0	0	0	0	0	0	0
epsgrowth	0	0	0	0	0	0	0	0	0	0	0,01***	0	0	0	0	0	0	0
grossmargin	0	0	0	0	0	0	0	0	0,01**	0	0,93***	0,05	0	0	0	0	0,01	0,02
returnonasset	0	0	-0,04***	0,01	0,03***	0	-0,16***	0,04	0	(omitted)	1,52***	0,27	0,02***	0	0	0	0,03***	0,02
returnoncamp	0	0	-0,01***	0	0,02***	0	-0,14***	0,02	-0,01	0,01	-0,23**	0,11	0,01***	0	0	0	0,09***	0,01
returncomeqy	0	0	0,01**	0	-0,01***	0	0,12***	0,02	-0,01***	0	-0,12	0,12	-0,01***	0	0	0	-0,01***	0,01
Dummy_crs1	0	0,07	-0,43**	0,17	-0,19*	0,1	-2,95***	0,65	-0,86***	0,3	2,66	3,52	-0,05*	0,03	-0,01	0,01	-2,61***	0,89
Dummy_crs2	0,16**	0,07	-0,72***	0,16	0,29***	0,1	-6,08***	0,63	-1,49***	0,29	-0,63	3,39	0,02	0,03	-0,01	0,01	-5,23***	0,86
Years Effect	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

This table represents Bid_Ask Spread reaction to a set of covariates. Index1 stands for business extent of disclosure (0=less disclosure, to 10=more disclosure), index 2 means depth of credit information (0=low, to 8=high) and index 3 stands for private credit bureau coverage (% of adults). Index 4 stands for ease of doing business (1=most business-friendly regulations, to 189-the weakest), index 5 – time to resolve insolvency (years), index 6 – strength of legal right (0=weak, to 12=strong), index 7 – cost of business start-up procedures (% of GNI per capita), index 8 – time required to start a business (days), index 9 – Start-up procedures to register a business (number). Ebit is earnings before interest expenses and income taxes; epsgrowth represent the percentage increase or decrease of earning before extraordinary items by comparing current period with same period prior year; grossmargin represents the percent of total sales revenue that the company retains after incurring the direct costs associated with producing the goods and services sold by a company; returnonasset stands for ROA, returnoncamp is a metric that measures the return that an investment generates for capital contributors; returncomeqy is a measure of a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested; curratio stands for the Current Ratio, ltbtbt stands for all interest-bearing financial obligations that are not due within a year; cormarcap represent the current market capitalization; currentpval is a measure of a company's theoretical takeover price. Lastly $Stage_{k,i}$ is a set of dummy variables indicating different stages of the financial crisis. In table 1 we report the expected sign of each covariate with respect to target variable. Dummy_crs1 represent Global financial crisis between 15th September 2008 and 1st May 2010 while Sovereign debt crisis denotes the period between 2nd May 2010 and 30th June 2012 (dummy_crs2).

Tab. 5. Liquidity – Volume – Overall Sample – Eastern Europe Country and Turkey – Sample Period 2003 to 2014

	Czech Republic		Estonia		Hungary		Latvia		Lithuania		Poland		Romania		Turkey		Ukraine	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Panel A – Legal Efficiency	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Err.
Index 5	-282525,6*	166379,7	0	(omitted)	0	(omitted)	26172,07	22484,77	0	(omitted)	0	(omitted)	-11400000	11400000	0	(omitted)	0	(omitted)
Index 6	-172181,7	166585,6	-10746,19	46486,02	-157781,1	181311	-232,17	2128,99	-14558,62	29503,04	332001,9	255912,9	213443,3	1747213	-3002336	2371082	-628744,5*	353627,9
cormarcap	10,16***	3,17	883,04***	148,16	18,67***	0,66	1238,77***	23,94	8558,14***	420,62	706,63***	41,45	6549,07***	850,32	22761,24***	555,3	668,15***	508,87
currentpval	29,83***	4,91	100285,1***	7825,67	-8,78***	0,63	-11,5	11,25	772,93**	302,05	787,79***	55,46	557,83	782,9	-8569,21***	718,59	-1055,33**	456,32
curratio	1621678***	430755,7	-346407,9***	67915,44	-2303258***	250530,4	357,08	422,03	15650,01	16994,05	4750980	719474,5	-4313155	4932069	-267279,2**	119592,6	-6197342***	606158,4
ltbtbt	125799,9***	20957,85	57067,69***	4172,03	-25629,94**	12878,6	1151,12***	315,98	-9366,31***	2674,07	373282,2***	61830,16	-2653974***	437811,8	796606,2***	211811,9	888507,6***	77748,91
ebit	-253,86	165,91	0	(omitted)	63,13***	19,22	-24,05**	11,27	77709,33***	15067,67	-3606,86**	1474,6	-24043,97	17303,39	-39692,12*	24805,31	682,12	932,68
epsgrowth	42,38	80,27	-19,82	38,58	-34,57	73,46	0,45	0,36	35,53	29,25	-817,24	1106,52	15352,29	11135,8	496,38*	287,54	-330,7	382,9
grossmargin	114741,6***	11037,48	4579,48*	2624,13	101489,6***	8530,68	55,54	118,75	-12657,5***	1666,38	-234564,4***	36621,95	44534,55	155011,2	-360329,5***	108435	-203087,9***	60176,42

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
returnonasset	-360266,2***	79460,13	-18313,55	13126,43	321835,3***	68685,82	-225,35	1444,48	0	(omitted)	580215,3***	189696,5	-3689964**	1846901	3371491***	276557,8	418538,5***	84916,15
returnoncamp	45153,78	52688,45	60198,43***	6153,6	-217401,2***	34873,91	405,03	924,17	-2361,16	6037,43	396839,1***	81796,17	-944050	1528926	113544,1	98036,72	-158877,1***	45705,17
returncomeqy	65314,73*	36004,07	3448,97	6415,82	-5644,99	16049,81	-494,99	700,82	-3747,67**	1671,57	-643796,5***	82650,81	126005,4	771037,9	-2818561***	103426,5	-23274,43	18913,54
Dummy_crs1	1575494	1409561	497919,6	343147,1	-4548142***	1539117	8492,31	25874,49	714070,6***	179128,1	-3128858	2501113	-996380,3	16800000	33000000	14400000	-2151878	3275813
Dummy_crs2	1064167	1378343	57945,78	330214,9	-3250732**	1493427	14026,97	25058,07	497468,9***	173401,7	-623517,4	2412848	18100000	16400000	10800000	13900000	9066076***	3168798
Years Effect	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Panel B-Legal rights																		
Index 1	-729344,2	582372,9	-90406,98**	40333,81	1929290	809002,5	-1931,16	6783,18	2999,58	24551,78	-139277,2	276719,7	-1195227	1586782	-6867288***	1198762	3578004***	863745,1
Index 2	1254532**	513409,5	51487,41	82149,81	16338,65	257183,2	-8314,92***	4398,11	143196,6***	27756,99	-283009,8	1127041	-2612685	4038818	-11800000	2049708	-1113189	895437,2
Index 3	-123234,4***	42264,92	-33885,7*	17416,55	53492,31***	18832,24	0	(omitted)	-12404,58***	2055,27	42860,64	99976,92	560321,1	570494,7	-201102	165357,5	36507,79	136870
cormarcap	10,16***	3,17	883,04***	148,16	18,67***	0,66	1238,77***	23,94	8558,14***	420,62	706,63***	41,45	6549,07***	850,32	22761,24***	555,3	668,15***	508,87
currentpval	29,83***	4,91	100285,1***	7825,67	-8,78***	0,63	-11,5	11,25	772,93**	302,05	787,79***	55,46	557,83	782,9	-8569,21***	718,59	-1055,33**	456,32
curratio	1621678***	430755,7	-346407,9***	67915,44	-2303258***	250530,4	357,08	422,03	15650,01	16994,05	4750980	719474,5	-4313155	4932069	-267279,2**	119592,6	-6197342***	606158,4
ltbtbt	125799,9***	20957,85	57067,69***	4172,03	-25629,94**	12878,6	1151,12***	315,98	-9366,31***	2674,07	373282,2***	61830,16	-2653974***	437811,8	796606,2***	211811,9	888507,6***	77748,91
ebit	-253,86	165,91	0	(omitted)	63,13***	19,22	-24,05**	11,27	77709,33***	15067,67	-3606,86**	1474,6	-24043,97	17303,39	-39692,12*	24805,31	682,12	932,68
epsgrowth	42,38	80,27	-19,82	38,58	-34,57	73,46	0,45	0,36	35,53	29,25	-817,24	1106,52	15352,29	11135,8	496,38*	287,54	-330,7	382,9
grossmargin	114741,6***	11037,48	4579,48*	2624,13	101489,6***	8530,68	55,54	118,75	-12657,5***	1666,38	-234564,4***	36621,95	44534,55	155011,2	-360329,5***	108435	-203087,9***	60176,42
returnonasset	-360266,2***	79460,13	-18313,55	13126,43	321835,3***	68685,82	-225,35	1444,48	0	(omitted)	580215,3***	189696,5	-3689964**	1846901	3371491***	276557,8	418538,5***	84916,15
returnoncamp	45153,78	52688,45	60198,43***	6153,6	-217401,2***	34873,91	405,03	924,17	-2361,16	6037,43	396839,1***	81796,17	-944050	1528926	113544,1	98036,72	-158877,1***	45705,17
returncomeqy	65314,73*	36004,07	3448,97	6415,82	-5644,99	16049,81	-494,99	700,82	-3747,67**	1671,57	-643796,5***	82650,81	126005,4	771037,9	-2818561***	103426,5	-23274,43	18913,54
Dummy_crs1	1575494	1409561	497919,6	343147,1	-4548142***	1539117	8492,31	25874,49	714070,6***	179128,1	-3128858	2501113	-996380,3	16800000	33000000	14400000	-2151878	3275813
Dummy_crs2	1064167	1378343	57945,78	330214,9	-3250732**	1493427	14026,97	25058,07	497468,9***	173401,7	-623517,4	2412848	18100000	16400000	10800000	13900000	9066076***	3168798
Years Effect	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Panel C - Economic Efficiency																		
Index 4	132376,9***	47043,56	-30465,05	27358,2	-52680,63	36550,82	-841,23	1072,25	82032,65**	34077,76	29145,72	105730,1	-395295,5	323417,1	-3446,25	208594,2	-7193,58	35133,53
Index 7	2508278***	797380,6	84679,66	157486,7	63112,42	72524,37	1497,18	4246,86	-222501,7**	111039,6	1060936	853607,5	-8981341**	4408164	2564902***	820990,3	746194,3***	296968
Index 8	-83135,18	54504,29	-4451,11	11874,63	-139934,2***	41766,73	0	(omitted)	106516,3**	50277,37	-182210,9*	110333	1209641	1221507	580922,5	520290,5	-1518703***	537289,1
Index 9	0	(omitted)	0	(omitted)	-287262,2	1083231	21923,41	30565,16	74555,45	127626,7	-765131,5	1250683	28500000	14200000	0	(omitted)	75063,65	599535,1
cormarcap	10,16***	3,17	883,04***	148,16	18,67***	0,66	1238,77***	23,94	8558,14***	420,62	706,63***	41,45	6549,07***	850,32	22761,24***	555,3	668,15***	508,87
currentpval	29,83***	4,91	100285,1***	7825,67	-8,78***	0,63	-11,5	11,25	772,93**	302,05	787,79***	55,46	557,83	782,9	-8569,21***	718,59	-1055,33**	456,32
curratio	1621678***	430755,7	-346407,9***	67915,44	-2303258***	250530,4	357,08	422,03	15650,01	16994,05	4750980	719474,5	-4313155	4932069	-267279,2**	119592,6	-6197342***	606158,4
ltbtbt	125799,9***	20957,85	57067,69***	4172,03	-25629,94**	12878,6	1151,12***	315,98	-9366,31***	2674,07	373282,2***	61830,16	-2653974***	437811,8	796606,2***	211811,9	888507,6***	77748,91
ebit	-253,86	165,91	0	(omitted)	63,13***	19,22	-24,05**	11,27	77709,33***	15067,67	-3606,86**	1474,6	-24043,97	17303,39	-39692,12*	24805,31	682,12	932,68
epsgrowth	42,38	80,27	-19,82	38,58	-34,57	73,46	0,45	0,36	35,53	29,25	-817,24	1106,52	15352,29	11135,8	496,38*	287,54	-330,7	382,9
grossmargin	114741,6***	11037,48	4579,48*	2624,13	101489,6***	8530,68	55,54	118,75	-12657,5***	1666,38	-234564,4***	36621,95	44534,55	155011,2	-360329,5***	108435	-203087,9***	60176,42
returnonasset	-360266,2***	79460,13	-18313,55	13126,43	321835,3***	68685,82	-225,35	1444,48	0	(omitted)	580215,3***	189696,5	-3689964**	1846901	3371491***	276557,8	418538,5***	84916,15
returnoncamp	45153,78	52688,45	60198,43***	6153,6	-217401,2***	34873,91	405,03	924,17	-2361,16	6037,43	396839,1***	81796,17	-944050	1528926	113544,1	98036,72	-158877,1***	45705,17
returncomeqy	65314,73*	36004,07	3448,97	6415,82	-5644,99	16049,81	-494,99	700,82	-3747,67**	1671,57	-643796,5***	82650,81	126005,4	771037,9	-2818561***	103426,5	-23274,43	18913,54
Dummy_crs1	1575494	1409561	497919,6	343147,1	-4548142***	1539117	8492,31	25874,49	714070,6***	179128,1	-3128858	2501113	-996380,3	16800000	33000000	14400000	-2151878	3275813
Dummy_crs2	1064167	1378343	57945,78	330214,9	-3250732**	1493427	14026,97	25058,07	497468,9***	173401,7	-623517,4	2412848	18100000	16400000	10800000	13900000	9066076***	3168798
Years Effect	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

This table represents Volume reaction to a set of covariates. Index1 stands for business extent of disclosure (0=less disclosure, to 10=more disclosure), index 2 means depth of credit information (0=low, to 8=high) and index 3 stands for private credit bureau coverage (% of adults). Index 4 stands for ease of doing business (1=most business-friendly regulations, to 189-the weakest), index 5 – time to resolve insolvency (years), index 6 – strength of legal right (0=weak, to 12=strong), index 7 – cost of business start-up procedures (% of GNI per capita), index 8 – time required to start a business (days), index 9 – Start-up procedures to register a business (number). Ebit is earnings before interest expenses and income taxes; epsgrowth represent the percentage increase or decrease of earning before extraordinary items by comparing current period with same period prior year; grossmargin represents the percent of total sales revenue that the company retains after incurring the direct costs associated with producing the goods and services sold by a company; returnonasset stands for ROA, returnoncamp is a metric that measures the return that an investment generates for capital contributors; returncomeqy is a measure of a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested; curratio stands for the Current

Ratio, ltbtbt stands for all interest-bearing financial obligations that are not due within a year; cormarcap represent the current market capitalization; currentpval is a measure of a company's theoretical takeover price. Lastly $Stage_{k,i}$ is a set of dummy variables indicating different stages of the financial crisis. In table 1 we report the expected sign of each covariate with respect to target variable. Dummy_crs1 represent Global financial crisis between 15th September 2008 and 1st May 2010 while Sovereign debt crisis denotes the period between 2nd May 2010 and 30th June 2012 (dummy_crs2).

Tab.6. Volatility – Systematic risk – Overall Sample – Eastern Europe Country and Turkey – Sample Period 2003 to 2014

	Czech Republic		Estonia		Hungary		Latvia		Lithuania		Poland		Romania		Turkey		Ukraine	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Panel A – Legal Efficiency	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Err.
Index 5	14,66***	5,44	0	(omitted)	0	(omitted)	0,02	0,07	0	(omitted)	0	(omitted)	-0,82	0,89	0	(omitted)	0	(omitted)
Index 6	2,11	5,45	0,16***	0,02	-0,44	10,3	0	0,01	0,04***	0,01	1,21	1,03	0	0,14	0,07*	0,04	-1,16	0,91
cormarcap	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-0,01***	0
currentpval	0	0	-0,01*	0	0	0	0	0	0	0	0	0	0	0	0	0	0,01	0
curratio	109,58***	14,09	0,26***	0,03	-68,34***	14,23	0	0	-0,01**	0	-9,41	2,9	0,91**	0,38	0	0	-3,47**	1,56
ltbtbt	-2,31***	0,69	0,01***	0	-0,56	0,73	0,01***	0	0	0	-0,15	0,25	0,03	0,03	-0,01***	0	-1,51***	0,2
ebit	0,02***	0,01	0	(omitted)	0	0	0	0	-0,01***	0	-0,02	0,01	0	0	0	0	-0,02***	0
epsgrowth	0	0	0	0	0,02***	0	0	0	0	0	0,01	0	0	0	0	0	0	0
grossmargin	-2,11***	0,36	0	0	-3,23***	0,48	0	0	0	0	1,29	0,15	-0,02	0,01	0	0	2,12***	0,16
returnonasset	-8,51***	2,6	0,01	0,01	1,24	3,9	0	0	0	(omitted)	1,65	0,76	0,55***	0,14	0,01***	0	1,69	0,22
returnoncamp	-4,04**	1,72	0	0	15,68***	1,98	0	0	0,02***	0	-1,24	0,33	-0,25**	0,12	0,01***	0	-0,96***	0,12
returncomeqy	3,45***	1,18	-0,01***	0	0,81	0,91	-0,01***	0	0	0	0,18	0,33	0,15***	0,06	0	0	-0,02	0,05
Dummy_crs1	66,17	46,1	-0,15	0,16	-69,6	87,44	-0,25***	0,08	0,15***	0,04	-1,52	10,06	2,56**	1,31	-0,14	0,22	-18,8**	8,45
Dummy_crs2	49,45	45,08	-0,21	0,15	-107,9	84,84	0,2**	0,08	0,05	0,04	7,32	9,71	0,67	1,27	0,65***	0,22	7,65	8,18
Years Effect	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Panel B- Transparency																		
Index 1	-27,83	19,05	-0,05***	0,02	-33,29	45,96	0,02	0,02	-0,04***	0,01	6,3	1,11	-0,08	0,12	0,11***	0,02	11,14***	2,23
Index 2	-11,9	16,79	0,25***	0,04	10,74	14,61	0,02*	0,01	0	0,01	9,67	4,54	-0,17	0,31	0,2	0,03	8,15	2,31
Index 3	-0,81	1,38	-0,03***	0,01	-7,71***	1,07	0	(omitted)	0	0	-0,29	0,4	0,04	0,04	0	0	-1,18***	0,35
cormarcap	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-0,01***	0
currentpval	0	0	-0,01*	0	0	0	0	0	0	0	0	0	0	0	0	0	0,01	0
curratio	109,58***	14,09	0,26***	0,03	-68,34***	14,23	0	0	-0,01**	0	-9,41	2,9	0,91**	0,38	0	0	-3,47**	1,56
ltbtbt	-2,31***	0,69	0,01***	0	-0,56	0,73	0,01***	0	0	0	-0,15	0,25	0,03	0,03	-0,01***	0	-1,51***	0,2
ebit	0,02***	0,01	0	(omitted)	0	0	0	0	-0,01***	0	-0,02	0,01	0	0	0	0	-0,02***	0
epsgrowth	0	0	0	0	0,02***	0	0	0	0	0	0,01	0	0	0	0	0	0	0
grossmargin	-2,11***	0,36	0	0	-3,23***	0,48	0	0	0	0	1,29	0,15	-0,02	0,01	0	0	2,12***	0,16
returnonasset	-8,51***	2,6	0,01	0,01	1,24	3,9	0	0	0	(omitted)	1,65	0,76	0,55***	0,14	0,01***	0	1,69	0,22
returnoncamp	-4,04**	1,72	0	0	15,68***	1,98	0	0	0,02***	0	-1,24	0,33	-0,25**	0,12	0,01***	0	-0,96***	0,12
returncomeqy	3,45***	1,18	-0,01***	0	0,81	0,91	-0,01***	0	0	0	0,18	0,33	0,15***	0,06	0	0	-0,02	0,05
Dummy_crs1	66,17	46,1	-0,15	0,16	-69,6	87,44	-0,25***	0,08	0,15***	0,04	-1,52	10,06	2,56*	1,31	-0,14	0,22	-18,8**	8,45
Dummy_crs2	49,45	45,08	-0,21	0,15	-107,9	84,84	0,2**	0,08	0,05	0,04	7,32	9,71	0,67	1,27	0,65***	0,22	7,65	8,18
Years Effect	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Panel C - Economic Efficiency																		
Index 4	-0,35	1,54	-0,09***	0,01	-7,15***	2,08	0	0	0,03***	0,01	0,44	0,43	0,09***	0,03	0,01***	0	-0,42***	0,09
Index 7	-31,15	26,08	-0,3***	0,07	0,18	4,12	-0,01	0,01	-0,09***	0,02	10,47	3,43	-1,02***	0,34	0,03**	0,01	3,59	0,77
Index 8	11,03***	1,78	0,01	0,01	-15,34***	2,37	0	(omitted)	0,07***	0,01	-1,4	0,44	0,47***	0,1	-0,03***	0,01	-9,1***	1,39
Index 9	0	(omitted)	0	(omitted)	200,19***	61,54	0,03	0,1	-0,13***	0,03	-15	5,03	3,07***	1,1	0	(omitted)	1,06	1,55
cormarcap	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-0,01***	0
currentpval	0	0	-0,01*	0	0	0	0	0	0	0	0	0	0	0	0	0	0,01	0
curratio	109,58***	14,09	0,26***	0,03	-68,34***	14,23	0	0	-0,01**	0	-9,41	2,9	0,91**	0,38	0	0	-3,47**	1,56
ltbtbt	-2,31***	0,69	0,01***	0	-0,56	0,73	0,01***	0	0	0	-0,15	0,25	0,03	0,03	-0,01***	0	-1,51***	0,2
ebit	0,02***	0,01	0	(omitted)	0	0	0	0	-0,01***	0	-0,02	0,01	0	0	0	0	-0,02***	0
epsgrowth	0	0	0	0	0,02***	0	0	0	0	0	0,01	0	0	0	0	0	0	0
grossmargin	-2,11***	0,36	0	0	-3,23***	0,48	0	0	0	0	1,29	0,15	-0,02	0,01	0	0	2,12***	0,16
returnonasset	-8,51***	2,6	0,01	0,01	1,24	3,9	0	0	0	(omitted)	1,65	0,76	0,55***	0,14	0,01***	0	1,69	0,22
returnoncamp	-4,04*	1,72	0	0	15,68***	1,98	0	0	0,02***	0	-1,24	0,33	-0,25**	0,12	0,01***	0	-0,96***	0,12
returncomeqy	3,45***	1,18	-0,01***	0	0,81	0,91	-0,01***	0	0	0	0,18	0,33	0,15***	0,06	0	0	-0,02	0,05
Dummy_crs1	66,17	46,1	-0,15	0,16	-69,6	87,44	-0,25***	0,08	0,15***	0,04	-1,52	10,06	2,56*	1,31	-0,14	0,22	-18,8**	8,45
Dummy_crs2	49,45	45,08	-0,21	0,15	-107,9	84,84	0,2**	0,08	0,05	0,04	7,32	9,71	0,67	1,27	0,65***	0,22	7,65	8,18
Years Effect	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

This table represents Systematic risk reaction to a set of covariates. Index1 stands for business extent of disclosure (0=less disclosure, to 10=more disclosure), index 2 means depth of credit information (0=low, to 8=high) and index 3 stands for private credit bureau coverage (% of adults). Index 4 stands for ease of doing business (1=most business-friendly regulations, to 189-the weakest), index 5 – time to resolve insolvency (years), index 6 – strength of legal right (0=weak, to 12=strong), index 7 – cost of business start-up procedures (% of GNI per capita), index 8 – time required to start a business (days), index 9 – Start-up procedures to register a business (number). Ebit is earnings before interest expenses and income taxes; epsgrowth represent the percentage increase or decrease of earning before extraordinary items by comparing current period with same period prior year; grossmargin represents the percent of total sales revenue that the company retains after incurring the direct costs associated with producing the goods and services sold by a company; returnonasset stands for ROA, returnoncamp is a metric that measures the return that an investment generates for capital contributors; returncomeqy is a measure of a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested; curratio stands for the Current Ratio, ltbtbt stands for all interest-bearing financial obligations that are not due within a year; cormarcap represent the current market capitalization; currentpval is a measure of a company's theoretical takeover price. Lastly $Stage_{k,i}$ is a set of dummy variables indicating different stages of the financial crisis. In table 1 we report the expected sign of each covariate with respect to target variable. Dummy_crs1 represent Global financial crisis between 15th September 2008 and 1st May 2010 while Sovereign debt crisis denotes the period between 2nd May 2010 and 30th June 2012 (dummy_crs2).

Tab.7. Volatility – Unsystematic risk – Overall Sample – Eastern Europe Country and Turkey – Sample Period 2003 to 2014

	Czech Republic		Estonia		Hungary		Latvia		Lithuania		Poland		Romania		Turkey		Ukraine	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Panel A - Legal Efficiency	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Err.
Index 5	0,71	5,62	0	(omitted)	0	(omitted)	-0,28***	0,08	0	(omitted)	0	(omitted)	4,16***	0,87	0	(omitted)	0	(omitted)
Index 6	-12,5**	5,62	-0,2***	0,03	-1,58	6,4	0	0,01	0	0,01	0,26	1,81	-0,05	0,13	0,03	0,06	-0,83	0,68
cormarcap	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
currentpval	0	0	-0,02***	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
curratio	229,78***	14,54	0,4***	0,04	-57,28***	8,84	0	0	0	0	-16,54***	5,08	-0,19	0,38	0	0	-0,72	1,16

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
ltbtbt	-10,75***	0,71	0,02***	0	-0,08	0,45	0,01***	0	0,01***	0	-0,84*	0,44	-0,14***	0,03	-0,04***	0,01	-1,32***	0,15
ebit	0,03***	0,01	0	(omitted)	0	0	0	0	-0,01**	0	-0,03***	0,01	-0,01***	0	0	0	-0,02***	0
epsgrowth	0,01**	0	0	0	0,01***	0	0	0	0	0	0,02***	0,01	0	0	0	0	0	0
grossmargin	-1,85***	0,37	-0,01***	0	-1,52***	0,3	0	0	0	0	1,58***	0,26	0,21***	0,01	-0,01***	0	1,53***	0,12
returnonasset	8,79***	2,68	0	0,01	20,05***	2,42	0	0,01	0	(omitted)	2,59*	1,34	0,42***	0,14	0,03***	0,01	0,87***	0,16
returnoncamp	9,78***	1,78	0	0	10,74***	1,23	0,02***	0	0,03***	0	-0,81	0,58	0,48***	0,12	0,03***	0	-0,87***	0,09
returncomeqy	-6,61***	1,22	0	0	-1,79***	0,57	-0,01***	0	0	0	-0,47	0,58	-0,3***	0,06	0	0	-0,03	0,04
Dummy_crs1	0,23	47,58	-0,41*	0,21	-34,83	54,29	-0,3***	0,1	0,05	0,03	-1,77	17,67	-2,66**	1,29	0,2	0,36	13,51**	6,26
Dummy_crs2	-21,4	46,53	-0,23	0,2	-33,87	52,68	0,42***	0,09	0,02	0,03	-0,76	17,05	-0,41	1,26	0,71**	0,35	12,06**	6,06
Years Effect	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Panel B - Transparency																		
Index 1	14,56	19,66	-0,01	0,02	15,19***	28,54	0,01	0,03	0	0	15,57***	1,96	0,47***	0,12	0,31***	0,03	8,09***	1,65
Index 2	-11,33	17,33	-0,25***	0,05	12,41	9,07	0,11***	0,02	0,04***	0	33,28***	7,96	1,36***	0,31	0,48***	0,05	4,43***	1,71
Index 3	0,21	1,43	0,01	0,01	3,02***	0,66	0	(omitted)	0	0	-1,84***	0,71	-0,23***	0,04	0	0	-0,43*	0,26
cormarcap	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
currentpval	0	0	-0,02***	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
curratio	229,78***	14,54	0,4***	0,04	-57,28***	8,84	0	0	0	0	-16,54***	5,08	-0,19	0,38	0	0	-0,72	1,16
ltbtbt	-10,75***	0,71	0,02***	0	-0,08	0,45	0,01***	0	0,01***	0	-0,84*	0,44	-0,14***	0,03	-0,04***	0,01	-1,32***	0,15
ebit	0,03***	0,01	0	(omitted)	0	0	0	0	-0,01**	0	-0,03***	0,01	-0,01***	0	0	0	-0,02***	0
epsgrowth	0,01**	0	0	0	0,01***	0	0	0	0	0	0,02***	0,01	0	0	0	0	0	0
grossmargin	-1,85***	0,37	-0,01***	0	-1,52***	0,3	0	0	0	0	1,58***	0,26	0,21***	0,01	-0,01***	0	1,53***	0,12
returnonasset	8,79***	2,68	0	0,01	20,05***	2,42	0	0,01	0	(omitted)	2,59*	1,34	0,42***	0,14	0,03***	0,01	0,87***	0,16
returnoncamp	9,78***	1,78	0	0	10,74***	1,23	0,02***	0	0,03***	0	-0,81	0,58	0,48***	0,12	0,03***	0	-0,87***	0,09
returncomeqy	-6,61***	1,22	0	0	-1,79***	0,57	-0,01***	0	0	0	-0,47	0,58	-0,3***	0,06	0	0	-0,03	0,04
Dummy_crs1	0,23	47,58	-0,41*	0,21	-34,83	54,29	-0,3***	0,1	0,05	0,03	-1,77	17,67	-2,66**	1,29	0,2	0,36	13,51**	6,26
Dummy_crs2	-21,4	46,53	-0,23	0,2	-33,87	52,68	0,42***	0,09	0,02	0,03	-0,76	17,05	-0,41	1,26	0,71**	0,35	12,06**	6,06
Years Effect	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Panel C - Economic Efficiency																		
Index 4	0	1,59	-0,05***	0,02	1,42	1,29	0	0	0,02***	0,01	2,1***	0,75	-0,18***	0,02	0,01*	0,01	-0,36***	0,07
Index 7	82,21***	26,92	-0,15	0,1	0,63	2,56	0	0,02	-0,05**	0,02	-3,18	6,03	0,89***	0,34	-0,17***	0,02	2,63***	0,57
Index 8	-12,1***	1,84	0	0,01	-9,98***	1,47	0	(omitted)	0,03***	0,01	-0,16	0,78	-0,6***	0,09	0,04***	0,01	-6,67***	1,03
Index 9	0	(omitted)	0	(omitted)	118,55***	38,21	-0,49***	0,12	0,01	0,02	-2,14	8,84	-2,12*	1,09	0	(omitted)	0,27	1,15
cormarcap	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
currentpval	0	0	-0,02***	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
curratio	229,78***	14,54	0,4***	0,04	-57,28***	8,84	0	0	0	0	-16,54***	5,08	-0,19	0,38	0	0	-0,72	1,16
ltbtbt	-10,75***	0,71	0,02***	0	-0,08	0,45	0,01***	0	0,01***	0	-0,84*	0,44	-0,14***	0,03	-0,04***	0,01	-1,32***	0,15
ebit	0,03***	0,01	0	(omitted)	0	0	0	0	-0,01**	0	-0,03***	0,01	-0,01***	0	0	0	-0,02***	0
epsgrowth	0,01**	0	0	0	0,01***	0	0	0	0	0	0,02***	0,01	0	0	0	0	0	0
grossmargin	-1,85***	0,37	-0,01***	0	-1,52***	0,3	0	0	0	0	1,58***	0,26	0,21***	0,01	-0,01***	0	1,53***	0,12
returnonasset	8,79***	2,68	0	0,01	20,05***	2,42	0	0,01	0	(omitted)	2,59*	1,34	0,42***	0,14	0,03***	0,01	0,87***	0,16
returnoncamp	9,78***	1,78	0	0	10,74***	1,23	0,02***	0	0,03***	0	-0,81	0,58	0,48***	0,12	0,03***	0	-0,87***	0,09
returncomeqy	-6,61***	1,22	0	0	-1,79***	0,57	-0,01***	0	0	0	-0,47	0,58	-0,3***	0,06	0	0	-0,03	0,04
Dummy_crs1	0,23	47,58	-0,41*	0,21	-34,83	54,29	-0,3***	0,1	0,05	0,03	-1,77	17,67	-2,66**	1,29	0,2	0,36	13,51**	6,26
Dummy_crs2	-21,4	46,53	-0,23	0,2	-33,87	52,68	0,42***	0,09	0,02	0,03	-0,76	17,05	-0,41	1,26	0,71**	0,35	12,06**	6,06

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Years Effect	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

This table represents Unsystematic risk reaction to a set of covariates. Index1 stands for business extent of disclosure (0=less disclosure, to 10=more disclosure), index 2 means depth of credit information (0=low, to 8=high) and index 3 stands for private credit bureau coverage (% of adults). Index 4 stands for ease of doing business (1=most business-friendly regulations, to 189-the weakest), index 5 – time to resolve insolvency (years), index 6 – strength of legal right (0=weak, to 12=strong), index 7 – cost of business start-up procedures (% of GNI per capita), index 8 – time required to start a business (days), index 9 – Start-up procedures to register a business (number). Ebit is earnings before interest expenses and income taxes; epsgrowth represent the percentage increase or decrease of earning before extraordinary items by comparing current period with same period prior year; grossmargin represents the percent of total sales revenue that the company retains after incurring the direct costs associated with producing the goods and services sold by a company; returnonasset stands for ROA, returnoncamp is a metric that measures the return that an investment generates for capital contributors; returncomeqy is a measure of a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested; curratio stands for the Current Ratio, ltbtbt stands for all interest-bearing financial obligations that are not due within a year; cormarcap represent the current market capitalization; currentpval is a measure of a company's theoretical takeover price. Lastly $Stage_{k,i}$ is a set of dummy variables indicating different stages of the financial crisis. In table 1 we report the expected sign of each covariate with respect to target variable. Dummy_crs1 represent Global financial crisis between 15th September 2008 and 1st May 2010 while Sovereign debt crisis denotes the period between 2nd May 2010 and 30th June 2012 (dummy_crs2).