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EYE FOR AN EYE – WHAT MARKETS CONSIDER IMPORTANT WHEN VALUING BUSINESSES

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Abstract

Attracting investment capital is important for any developing country. In case of Georgia, attracting capital from foreign markets is of utmost importance as capacity of local financial market is limited. The study provides empirical assessment of micro and macro factors that affect valuation of businesses in international markets. These factors are grouped into company characteristics (having overall importance of 68%), current standing of businesses in industry/sector and region (16% and 1% respectively) and country characteristics (15%). Two out of these four groups of factors, namely sector and region, are out of control of governments and businesses. However, they have control over factors that weight 83% in total. This empirical observation supports the notion that joint efforts of governments and businesses can influence valuation of businesses on international financial markets.

Keywords: Attracting Investment Capital, Financial Markets, Business Valuation, Government Strategy, Business Strategy

1. Introduction

Among many challenges facing developing economies (especially smaller ones), there is the attracting capital for growth. At a lower level of development, the role of governments in economy including attracting investment capital is usually high. Economists warn about detrimental role of government's interventions in the economy. However, many scholars emphasize that none of the country have achieved economic success without reasonable government stimulus (Lin and Chang, 2009). Development economists think that the government should support industrial and technological development to develop competitive advantage (Lin and Chang, 2009). Neo-liberals assume that it is okay for a country to skip several steps when climbing the ladder of economic development. Despite differences in opinions regarding the role of the government and ways of achieving economic prosperity, everybody agrees that for economic growth, attracting capital is a key exercise.

As the local financial market has a limited capability to supply economy with long-term money, attracting capital from foreign markets without state guarantee is of utmost importance. Experience of developing countries shows that businesses in these countries are not very effective in attracting the capital from international markets as expressed in heavy underpricing and oversubscription during public offerings on developed capital markets. For example, in recent history, in case of Georgian businesses (country with population of 3.7M and GDP per capita of 9500\$) oversubscription always exceeded five times the offered securities while median indicator in international setting was assumed to be three. Experience of other developing nations is even more dramatic.

Presented issue is important because number of companies planning to attract capital from international markets increases and despite intensive privatization, there are still large enterprises in possession of the state. For example, capturing most of the value from privatization of state-owned assets and not leaving too much on the table is a main task for Government of Georgia (GoG) and quasi governmental funds (e.g. The Partnership Fund). Some of companies still owned by GoG are listed in **Table 1**. Presented research aims to elaborate a model of Government and firms' efforts to ensure optimal business valuation when attracting investment capital from international markets without government involvement.

Table 1. Large state-owned enterprises in Georgia

Company	State Ownership	Assets MGEL	Equity MGEL	Business
Georgian Oil and Gas Corporation	100%	1,230.9	676	Oil and gas transportation and trading
Georgian Railway	100%	2,968.4	1,562.8	Railway transportation
ESCO	100%	36	6.9	Electricity trading
Georgian State Electrosystem	100%	1,078.4	259.8	Electricity transmission and dispatch
Telasi	24.5%	264.8	114.6	Electricity distribution

Source: Author's analysis

Main theory is that joint efforts of Governments and firms are needed to achieve optimal valuations for businesses in developing countries that will ensure capturing maximum value of offerings reflected in adequate pricing for offering. The research aims to develop model through empirical observation and analysis of publicly available secondary data. Key question is what governments and firms should focus on when crafting strategies for maximizing valuations of their businesses.

2. Literature Review

Even though there are many models to determine value of business, there are two approaches, so called intrinsic and relative. From financial standpoint, the intrinsic value of an asset (being it company, property, etc.) equals expected cash flow during asset's life cycle considering uncertainties associated with these cash flows. Assets that have higher and more stable cash flows should be worth more than the ones with lower and unstable cash flows. Authors of intrinsic value concept outline relations between intrinsic value and the price. Graham and Dodd(2002) consider that speculative market factors, future value factors and intrinsic value factors, along with attitude of public toward the issue is a key determinant of the price.

Intuitively, the focus should be on intrinsic value when valuing an asset, however, most of the assets are valued by relative valuation. Under relative valuation an asset is valued based on market values of similar assets. For example, when valuing a house how other houses are priced in neighborhood will be considered along with other factors. It means relating the value of a company to prices of its peers. This approach implies that stock market factors, such as price levels on the market, trends, etc. have impact on company valuation, even though these factors do not directly affect company's business and thus its intrinsic value. However, they affect the price. Many scholars have researched factors affecting the business valuation and pricing. As an example, there is a brief overview of few future value oriented investment factors:

2.1. Ownership structure

According to Teixeira de Vasconcelos (2012), institutional ownership improves company's decision making capabilities and increases its value in tandem with other factors. Contrary to that, Ozen (2016) shows that going public and change in ownership structure through IPO resulted in worsening financial performance for many companies in Turkey. Bajramovic (2016) shows that in

transition economies ownership structure highly correlates with capital structure employed by companies. Acharya *et al.* (2013) indicate that unproportionally larger portion of private equity transactions are successful when factoring in financial leverage and sector returns. Higher rate of success is related to better sales and operating margins compared to that of public companies. Astrachan and Jaskiewicz (2008) presented arguments that when valuing family owned businesses, owners tend to factor in emotional factors as well.

2.2. Corporate governance

Survey of 200 institutional investors by McKinsey (2002) shows that investors consider corporate governance as important as company financials. Companies that achieve significant progress in corporate governance enjoy 10% improvement in valuation. La Porta *et al.* (1999) discuss positive correlation between firm's value and minority shareholders' rights.

Brief review of academic literature above shows that many factors determine the value of business. The value is a key determinant of a price, however, in practice, we find divergence of price and value (manifested in underpricing at IPO stage) that is a focus of the presented research. The best-established theory for explaining the divergence is asymmetric information theory, in which the market participants are considered to have varying information about the issuing process, which consequently creates an adverse selection problem. Ibbotson (1975) was among the researchers to present evidence for underpricing using a sample of IPO offerings. He suggested that the new issues were on average underpriced to leave a good taste in investors' mouth.

Other theory that explains IPO underpricing is control and ownership theory that considers conflict of interest among three parties involved in the process. Per Brennan and Franks (1997) underpricing is a way to ensure that the demand of necessary investors is met and the shares are allocated strategically to ensure that ownership is dispersed decreasing monitoring by outsiders. This is company directors' interest that is confronted with that of underwriters. Underwriters aim to allocate the shares among large and informed investors to reduce liquidity. Furthermore, Booth and Chua (1996) indicate underpricing as a way of achieving dispersed ownership to ensure liquidity of the secondary market for issues. Several authors empirically show negative relationship between underpricing and large investors in IPO. Next theory is procedural theory that is based on assumptions that many companies are subject to legal liability and lawsuits by shareholders in the post-IPO markets. Ibbotson (1975) and Ritter (1998) consider the likelihood of suing the company by the shareholders, who are not satisfied with the post-IPO performance or allocation as a determinant of underpricing. Beatty and Ritter (1986) mention underpricing as a way of reducing tax liability.

To summarize, there are many factors that affect company value and its price. There are many methods and models to value businesses. The presented research aims to identify those micro and macro factors that are factored by financial markets in business valuation. Micro factors are factors that can be managed by company, macro factors are factors beyond company control.

3. Methodology

Parsimony is defined as a core criterion for selecting research methods and developing the model. Thus, the choice is made to utilize publicly available information and employ methods that would make interpretation of results simple and straightforward.

As the main aim of research is to elaborate unified model on business valuation considering micro and macro factors, the general (not sector-specific) model is going to be created. Main theory is that joint efforts of Governments and firms are needed to achieve optimal valuations for businesses in developing countries that will ensure capturing maximum value of offerings reflected in adequate pricing for offering. The research aims to develop model through empirical observation and analysis of publicly available secondary data.

Key question is what governments and firms should focus on when crafting strategies for maximizing valuations of their businesses.

Key research questions were:

1. How investors value companies?
- 1.1. What factors are important?
- 1.2. How important are those factors?
2. What effect does “country factor” have on company valuation?
3. What determines “country factor” – e.g. GDP size, infrastructure development, etc.?
4. What should companies and countries be focusing on to improve valuation of their businesses?

Core theory of research is that market price is set based on following group of factors:

1. Company characteristics
 - 1.1. Individual – speculative market factors
 - 1.2. Individual – future value oriented investment factors
 - 1.3. Individual – Intrinsic value oriented investment factors (fundamentals)
2. Businesses valuation in the industry/sector
3. Businesses valuation in the region
4. Specific economy (country) factors
5. General (capital) market factors
6. Transactional factors

Impact of some of these factors is well researched in academic literature, analysis of all factors conjointly is an original contribution of the research to general knowledge. In addition to identifying wide spectrum of important factors, one of the main objectives is to assess importance of these factors and quantitatively estimate their impact to develop “menu” for governments and companies to shape their strategies.

Based on these quantitative and quasi-quantitative relations, the set of recommendations is elaborated that would help governments and companies to assess potential impacts from their actions to fine-tune development and implementation of their strategies to achieve better valuation of their businesses. Out of groups of factors listed above, transactional factors are set out of scope for the presented research.

For the research, three dependent variables (that are most widely used in relative business valuations) are selected. These are Book value multiple (P/BV), Sales multiple (EV/Sales), and Operating profit multiple (EV/EBIT). Stepwise regression is used for model simplification and for model elaboration, linear regression analysis is selected for its simplicity and interpretability.

3.1 Data Sources

Table 2 shows the secondary data sources used in this study.

Table 2. Secondary data sources

Area	Description	Source	Period
Capital markets	Market index data	Warton Research Data Services (WRDS)	2000-2015
Company	Company data	S&P Capital IQ	2010-2015
Country	Doing Business	The World Bank	2004-2016
Country	World Development Indicators	The World Bank	1960-2015
Country	Global Competitiveness Index	World Economic Forum	2006-2015
Country	Economic Freedom Index	Heritage Foundation	2013-2016
Country	Worldwide Governance Indicators	The World Bank	1996-2014

3.1.1. Company Data

One of the issues related to linear regression is collinearity, i.e. inter dependence among independent variables. Considering scope and nature of the research, fully eliminating collinearity was unrealistic, however, following steps were undertaken to limit its impact. Variables with very strong correlation (.90+) and describing almost the same concept were excluded (one of variables). As an example of conceptual match, two variables CIQ_BDTER – Debt to Equity ratio and CIQ_BDTCR-Debt to Capital ratio that measured capital structure could be presented. Decision was made to include simpler ratio CIQ_BDTER in the analysis. Company data consisted of 43 variables grouped into fundamental, future growth and speculative factors.

3.1.2. Sector and Region Data

Data for sector (i.e. industry) and region was composed from aggregating detailed company level data. Medians and standard deviations for sectors and regions were calculated. In total, 34 independent variables were included for each. As company data was prone to omissions and errors regarding sector affiliation, the following data cleaning procedure was implemented. Initially, sector classifier was developed and then sector data was adjusted for each company. Initially database consisted of 116 sectors, after data cleaning, there were 86 unique sectors. For regional identifiers UN, general classification of countries and regions was used. Country of origin was indicated for each company from primary source.

3.1.3. Country Data

Analysis of descriptions from different data sources showed that different indexes were measuring the same concept from slightly different angle. Different information sources had different quality of data in terms of omissions. Decision was made to use Global Competitiveness Index from World Economic Forum and World Governance Indicators from the World Bank. Country data consisted of 112 variables.

3.1.4. Capital Markets Data

Per international practice, companies can be listed on several stock exchanges. Exchange indicated as primary by the company itself was used as capital market in the analysis. Stock market indexes were defined for each exchange. As market indexes are measured in different units, standardized values were used. Basic standardization formula was used:

$$indexvalue = \frac{prccm - \overline{prccm}}{\partial_{prccm}} \quad (1)$$

Where,

Indexvalue – standardized value of market index

prccm – index's close value

\overline{prccm} – average of index value

∂_{prccm} – Index's standart deviation

For capital market factors operationalization, the index's HiLo risk measure and exchange importance measure as defined by S&P were also used. In total, capital markets data consisted of three variables.

3.2. Sampling

Database consisted of data items for 250,361 companies. 5,000 units were selected randomly, that after cleaning data for omissions resulted in final sample of 2,979 companies. The sample is statistically large and adequate to ensure desired statistical reliability. Holdout simple random sample of 8,000 units was also drawn for checking quality of elaborated model.

3.3. Model Elaboration

One of the key objectives for creating the model was simplification, i.e. identifying simple linear relations between dependent and limited number of independent variables. For this purpose, stepwise regression analysis was selected. Stepwise regression is a semi-automated procedure that identifies set of independent variables that best explain variation in dependent variable. There are three basic procedures to stepwise regression: (1) Additional variable enters analysis at each iteration, (2) variable by variable are excluded from the analysis at each iteration and (3) combination of both. This way, the model is evaluated based on selected statistical criterion during each iteration, and the best model is selected. Final model includes only those independent variables that result in most optimal value of selected statistics.

There were large number of selection criteria. Presented research utilized use of Akaike Information Criterion (AIC) that allows measuring relative quality of analyzed models and provides a means for model selection. AIC is a criterion that rewards residuals reduction and penalizes increase of number of variables in the model. Shortly, AIC measures what information is lost in the model. So, key selection criteria were to select model with the lowest AIC value meaning the smallest portion of information lost. This criterion deals with the trade-off between the goodness-of-fit and the complexity of the model. Holdout sample of 8,000 units were used to assess quality of models.

The analysis resulted in set of regression models that allowed to estimate range of values for businesses taking into consideration micro and macro factors. Those regression models had the following form:

$$E(DV) = \alpha + \sum \beta_i IV_i + \mu \quad (2)$$

Where, E(DV) – expected value for dependent variable (i.e. P/BV, EV/Sales, EV/EBIT)

Standardized regression coefficients were used to estimate factors importance. The formula was as follows:

$$I_{iv} = \frac{|\beta_i|}{\sum |\beta_i|} \quad (3)$$

Where, $|\beta_i|$ absolute value of standartized regression coefficient for variable i

To estimate overall importance for factors scoring statistically significant in several models the maximum value standartized regression coefficient was taken. The formula for estimating overall importance of factors was as follows:

$$I_i = \frac{\max |\beta_i^M|}{\sum \max |\beta_i^M|} \quad (4)$$

Where, β_i^M – standartized regression coefficient for independ variable i in model (M)

4. Findings and Discussion

The following chapters present the importance of factors that was evaluated by running linear regression on models simplified by stepwise regression analysis that reduced the number of independent variables included in the models for each dependent variable based on their contribution to explanatory power of the model as described in research methodology.

4.1. Book Value Multiple Model (P/BV)

The regression analysis results are outlined in Table 3.

Table 3. Regression results for book value multiple (P/BV)

Variable	Factor	Coefficients	Stand. beta
Revenues(CIQ_R)	Fundamental	-6.17E-06. (-1.8)	-1.32E-02
Historical growth in Net Income - Last 3 years(CIQ_HGINI3)	Future	3.14E-01. (1.85)	1.44E-02
Liquidity Ratio (Annual trading volume/Shrs outs.) (CIQ_LR)	Speculative	-1.10E-01. (-1.77)	-1.55E-02
Median Beta for Industry(CIQ_B_IND)	Industry	7.77E-01. (1.77)	1.55E-02
Expected growth in revenues - Next 2 years(CIQ_EGIR_N)	Future	6.56E-01* (2.22)	1.61E-02
Gov't procurement of advanced tech products(GCI_V_EOSQ074)	Innovation	-3.25E-01 (-1.48)	-1.69E-02
Historical growth in Net Income - Last 5 years(CIQ_HGINI5)	Future	5.35E-01* (2.38)	1.90E-02
Historical growth in Revenues - Last 5 years(CIQ_HGIR5)	Future	1.94E+00* (2.56)	2.13E-02
Net Profit Margin(CIQ_NPM)	Fundamental	1.43E+00* (2.07)	2.20E-02
Hiring and firing practices(GCI_V_EOSQ134)	Labor Market Efficiency	2.34E-01* (2.5)	2.94E-02
Median HiLo Risk Measure (Hi- lo)/ (Hi+Lo) for Region(CIQ_HRML_REG)	Region	-2.29E+00* (-2.11)	-2.99E-02
Median HiLo Risk Measure (Hi- lo)/ (Hi+Lo) for Industry(CIQ_HRML_IND)	Industry	-3.80E+00* (-2.45)	-3.08E-02
Median Stock price (End of most recent year) in US\$ for Industry(CIQ_SP_IND)	Industry	1.01E-01* (2.5)	3.16E-02
Correlation with market(CIQ_CWM)	Speculative	1.60E+00** (2.88)	3.22E-02
Median Book Debt to Equity Ratio for Industry(CIQ_BDTER_IND)	Industry	-1.33E+00*** (-4.31)	-4.23E-02
Coeff of variation - Op Income(CIQ_COV_OI)	Fundamental	1.35E+00*** (3.9)	4.31E-02
Pre-tax Operating Margin(CIQ_POM)	Fundamental	2.91E+00*** (3.93)	4.46E-02
Beta(CIQ_B)	Speculative	-5.94E-01*** (-4.14)	-4.64E-02
Median Market Cap (in US \$) for Industry(CIQ_MC_IND)	Industry	-7.02E-04*** (-4.11)	-4.93E-02
Coeff of variation - Net Income(CIQ_COV_NI)	Fundamental	-1.55E+00*** (-6.13)	-6.35E-02
Control of Corruption: Estimate(WGICC.EST)	Governance	-8.86E-01*** (-5.73)	-6.47E-02
Median Return on Capital (ROC or ROIC) for Industry(CIQ_ROCOR_IND)	Industry	-9.73E+00*** (-5.56)	-6.79E-02
Invested Capital Change in 4 qrts(CIQ_ICC4Q)	Fundamental	-4.42E-01*** (-7.92)	-7.39E-02
Willingness to delegate authority(GCI_V_EOSQ124)	Business Sophistication	1.07E+00*** (6.25)	8.23E-02
Return on Capital (ROC or ROIC) (CIQ_ROCOR)	Fundamental	1.16E+00*** (9.96)	9.57E-02
Median EV/Sales for Industry(CIQ_E__S_IND)	Industry	-3.88E-01*** (-7.9)	-9.88E-02
Median PBV for Industry(CIQ_PBV_IND)	Industry	1.32E+00*** (11.02)	1.05E-01
Return on Equity(CIQ_ROE)	Fundamental	1.20E+00*** (18.67)	2.22E-01
Book Debt to Equity Ratio(CIQ_BDTER)	Fundamental	1.81E+00*** (59.29)	7.21E-01
Intercept		1.65E+00 (-1.73)	
N		2949	
Adjusted R-squared:		0.851	
F-statistic:		585	

Note: t-statistics are given in the parantheses. ***, **, and * represent significance levels at 1%, 5% and 10%.

Source: Author's analysis based on test sample of 2,979 units

As per Table 3, Beta coefficients of those factors were statistically significant at different levels. For most of the factors, t-statistics were statistically significant at <10% level indicating that there was enough evidence to reject null hypothesis about equality of beta coefficients to zero. Thus, effect of those factors on dependent variables could be estimated.

It should be mentioned that included factors explained around 85% variance in dependent variable as shown by coefficient of determination. The value of F-statistics with 29 and 2949 degrees of freedom equaled 585 which was statistically significant at 0.05 level. These showed that relations described by the model was statistically significant. Besides fitting historical data, the model's forecasting power was also important. The analysis showed that standard error for book value multiple amounted $S.E._{P/BV}=3.03$.

Figure 1 shows comparison of forecasted (blue) with actual (green) book value multiples for selected sample. The chart also shows 95% confidence interval (gray) for the indicator.

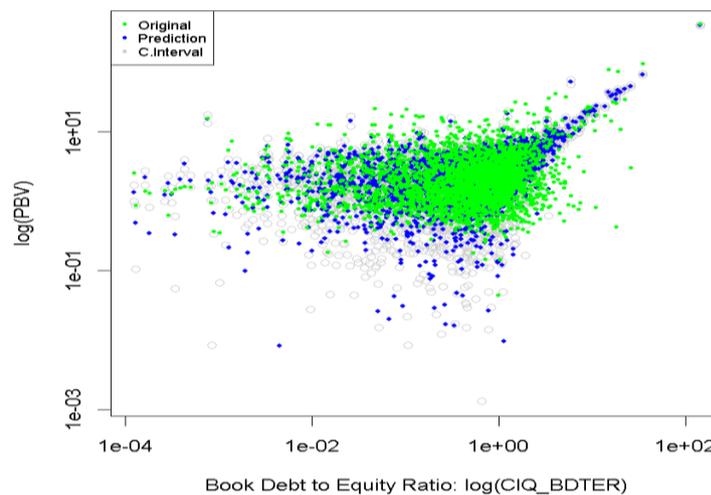


Figure 1. Regression validation for book value multiple

Source: Author's application of the regression model to holdout sample of 8000 units

For assessing forecasting power of the model residuals analysis was used as presented on Figure 2. Visual evaluation of which does not show any standard distribution pattern that would have had suggested that model's forecasting power could have been improved by including additional independent variable in the model.

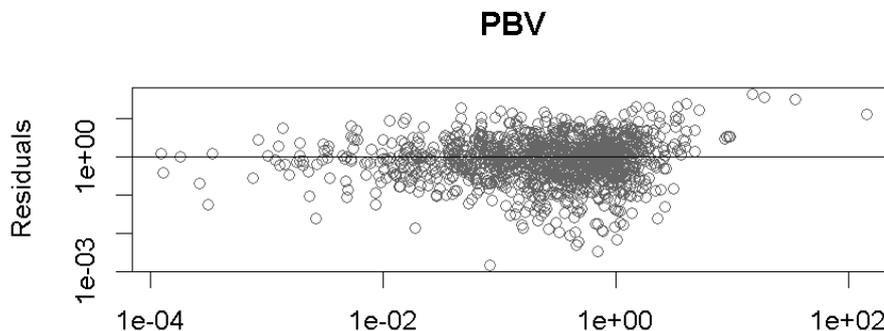


Figure 2. Residuals for book value multiple

Source: Author's application of the regression model to holdout sample of 8000 units

The same type of analysis was conducted for sales and EBIT multiples and identical conclusions were drawn.

4.2. Sales multiple Model (EV/Sales)

The regression analysis results for sales multiple are outlined below in Table 4.

Table 4. Regression results for sales multiple (EV/Sales)

Variable	Factor	Coefficients	Stand. Beta
Payout ratio(CIQ_PR)	Fundamental	1.89E-02 (1.56)	2.08E-02
Median Liquidity Ratio (Annual trading volume/Shrs outs) for industry (CIQ_LR_IND)	Industry	4.21E-01 (1.68)	2.55E-02
3rd pillar: Macroeconomic environment(GCI_V_GCI.A.03)	Macroeconomic Environment	-1.35E-01 (-1.42)	-2.80E-02
Quality of math and science education(GCI_V_EOSQ130)	Higher Education and Training	2.25E-01 (1.47)	3.27E-02
Historical growth in Revenues - Last 3 years(CIQ_HGIR3)	Future	8.34E-01* (2.33)	3.51E-02
Expected growth in revenues - Next 2 years(CIQ_EGIR_N)	Future	8.09E-01** (3.08)	4.13E-02
Median Stock price (End of most recent year) in US\$ for Industry(CIQ_SP_IND)	Industry	-6.91E-02** (-2.88)	-4.49E-02
Coeff of variation - Net Income(CIQ_COV_NI)	Fundamental	5.56E-01*** (3.34)	4.74E-02
Return on Capital (ROC or ROIC) (CIQ_ROCOR)	Fundamental	-2.79E-01** (-2.71)	-4.77E-02
Median EV/EBITDA for Industry(CIQ_EEV___EBITDA_IND)	Industry	2.52E-02** (3.27)	5.29E-02
Liquidity Ratio (Annual trading volume/Shrs outs) (CIQ_LR)	Speculative	-1.81E-01** (-3.28)	-5.33E-02
Prevalence of foreign ownership(GCI_V_EOSQ094)	Goods Market Efficiency	-4.69E-01** (-2.64)	-5.46E-02
Median Book Debt to Equity Ratio for Industry(CIQ_BDTER_IND)	Industry	1.07E+00*** (4.34)	7.09E-02
% held by institutions(CIQ_HBI)	Fundamental	8.80E-01*** (3.76)	7.27E-02
Median Net Profit Margin for Industry(CIQ_NPM_IND)	Industry	2.36E+00*** (4.46)	7.49E-02
Historical growth in Revenues - Last 5 years(CIQ_HGIR5)	Future	3.36E+00*** (4.97)	7.69E-02
Property rights(GCI_V_EOSQ051)	Institutions	-6.37E-01* (-2.57)	-9.13E-02
Quality of electricity supply(GCI_V_EOSQ064)	Infrastructure	7.45E-01*** (3.47)	1.07E-01
Public trust in politicians(GCI_V_EOSQ041)	Institutions	5.84E-01*** (3.32)	1.22E-01
Business impact of tuberculosis(GCI_V_EOSQ169)	Health and Primary Education	-9.48E-01*** (-4.54)	-1.30E-01
Return on Equity(CIQ_ROE)	Fundamental	-4.46E-01*** (-7.88)	-1.73E-01
Median EV/Sales for Industry(CIQ_E___S_IND)	Industry	3.46E-01*** (8.19)	1.84E-01
Book Debt to Equity Ratio(CIQ_BDTER)	Fundamental	2.51E-01*** (9.31)	2.08E-01
Net Profit Margin(CIQ_NPM)	Fundamental	7.59E+00*** (12.52)	2.44E-01
Pre-tax Operating Margin(CIQ_POM)	Fundamental	9.75E+00*** (15.02)	3.12E-01
Intercept		2.04E+00 (1.63)	
N		2949	
Adjusted R-squared:		0.492	
F-statistic:		101	

Note: t-statistics are given in the parentheses. ***, **, and * represent significance levels at 1%, 5% and 10%.

Source: Author's analysis based on test sample of 2,979 units

4.3. EBIT multiple Model (EV/EBIT)

The regression analysis results for EBIT multiple are outlined below in Table 5. Analysis showed that reinvestment rate was the most important factor for EBIT multiple.

Table 5. Regression results for EBIT multiple (EV/EBIT)

Variable	Factor	Coefficients	Stand. beta
Median HiLo Risk Measure (Hi- lo) / (Hi+Lo) for Industry(CIQ_HRML_IND)	Industry	-1.64E+01 (-1.52)	-3.19E-03
Median Revenues for Industry(CIQ_R_IND)	Industry	-2.53E-03* (-2.1)	-3.91E-03
Historical growth in Net Income - Last 5 years(CIQ_HGINI5)	Future	-4.65E+00* (-2.14)	-3.96E-03
Historical growth in Net Income - Last 3 years(CIQ_HGINI3)	Future	-3.66E+00* (-2.17)	-4.04E-03
Return on Capital (ROC or ROIC) (CIQ_ROCOR)	Fundamental	2.32E+00* (2.01)	4.59E-03
Quality of math and science education(GCI_V_EOSQ130)	Higher Education and Training	-3.61E+00** (-2.93)	-6.07E-03
Median PBV for Industry(CIQ_PBV_IND)	Industry	3.24E+00** (3.13)	6.21E-03
Coeff of variation - Net Income(CIQ_COV_NI)	Fundamental	6.45E+00*** (3.59)	6.34E-03
Quality of management schools(GCI_V_EOSQ131)	Higher Education and Training	3.03E+00 (1.64)	6.71E-03
Financing through local equity market(GCI_V_EOSQ091)	Financial Market Development	-4.36E+00** (-2.8)	-6.72E-03
Invested Capital Change in 4 qrts(CIQ_ICC4Q)	Fundamental	-2.07E+00*** (-3.75)	-8.32E-03
Median PBV for Region(CIQ_PBV_REG)	Region	-1.41E+01* (-2.45)	-8.78E-03
Intensity of local competition(GCI_V_EOSQ099)	Goods Market Efficiency	-8.02E+00** (-3.03)	-8.85E-03
Prevalence of foreign ownership(GCI_V_EOSQ094)	Goods Market Efficiency	-7.06E+00** (-3.21)	-9.47E-03
Return on Equity(CIQ_ROE)	Fundamental	-2.26E+00*** (-3.6)	-1.01E-02
Median Net Profit Margin for Industry(CIQ_NPM_IND)	Industry	3.05E+01*** (5.08)	1.12E-02
Book Debt to Equity Ratio (CIQ_BDTER)	Fundamental	1.39E+00*** (4.68)	1.33E-02
Pre-tax Operating Margin(CIQ_POM)	Fundamental	-3.75E+01*** (-5.21)	-1.39E-02
Median EV/Sales for Industry (CIQ_E__S_IND)	Industry	2.58E+00*** (6.99)	1.58E-02
Net Profit Margin (CIQ_NPM)	Fundamental	4.69E+01*** (6.93)	1.74E-02
Availability of latest technologies (GCI_V_EOSQ067)	Technological Readiness	1.40E+01*** (5.47)	1.78E-02
Reinvestment Rate (CIQ_RR)	Fundamental	1.03E+01*** (586.93)	9.96E-01
Intercept		3.82E+01 (2.92)	
N		2956	
Adjusted R-squared:		0.992	
F-statistic:		1.58e+04	

Note: t-statistics are given in the parentheses. ***, **, and * represent significance levels at 1%, 5% and 10%.

Source: Author's analysis based on test sample of 2,979 units

4.4. Important Factors

Based on methodology described above, the importance of company characteristics amounts for ca. 68% with 60% going to company fundamentals and future and speculative factors capturing 4.3% and 2.7% respectively. Sector's importance totaled 16.1% and that of region -0.8%. Effect of exchange did not yield statistically significant linear relations, however, two variables namely, beta and correlation with the market make it possible to judge effect of the exchange indirectly.

Importance of country factors amounts around 15 per cent. The factors include institutions (4.4%) that per WEF methodology constitutes of property rights (1.9%) and public trust in politicians (2.5%). Healthcare component as a measure of countries development is significant from perspective of business impact of diseases (2.7%). Quality of electricity supply as a proxy measure of infrastructure quality accounted for 2.2%. Business sophistication (1.7%) is important from viewpoint of willingness to delegate authority and governance (1.3%) from corruption control perspective.

Countries with efficient goods markets can produce correct mix of products and services based on specifics of their supply and demand, and trade them more effectively. Goods market efficiency's importance for business valuation (1.3%) is statistically significant with two factors: prevalence of foreign ownership (1.1%), that is directly related to foreign direct investments and intensity of local competition (0.2%) that shows level of openness of countries business environment.

Higher education and training (0.8%) has two statistically significant components: quality of math and science education (0.7%) and quality of management schools (0.1%). Labor market efficiency (0.6%) is based on hiring and firing practices in the country. Macroeconomic stability (0.6%) is important for the business and overall economy. Of course, macroeconomic stability does not improve productivity of country per se, but lack of it can significantly damage economy as shown by recent years' developments in Europe. Government cannot provide services effectively, fiscal deficit affects government's ability to react on business cycles in the future, companies function ineffectively under high inflation, etc. Aggregated indicator of macroeconomic stability assessed to be statistically significant.

Technology is extremely important for business competitiveness and development under globalization. Analysis showed that availability of latest technologies is a key determinant of importance of technological readiness (0.4%).

Innovation (0.4%) has many "faces" in business and economy. However, governments' procurement of advanced tech products resulted to be statistically significant. Recent financial and economic turmoil showed importance of well-functioning financial system to the economic engine. Financing through local equity market turned out to be key determinant of financial market development (0.1%) for business valuation purposes.

Factors importance is shown on Figure 3. Resulted model should not be considered as a replacement to full-fledged business valuation methods, but rather as tool for businesses and governments to shape their strategies. Based on the model, the businesses strategies for value enhancement should mainly focus on improving business fundamentals, and speculative factors such as exchange selection and others should be also considered. Set of recommendations to governments resulted from the model are presented in the text below.

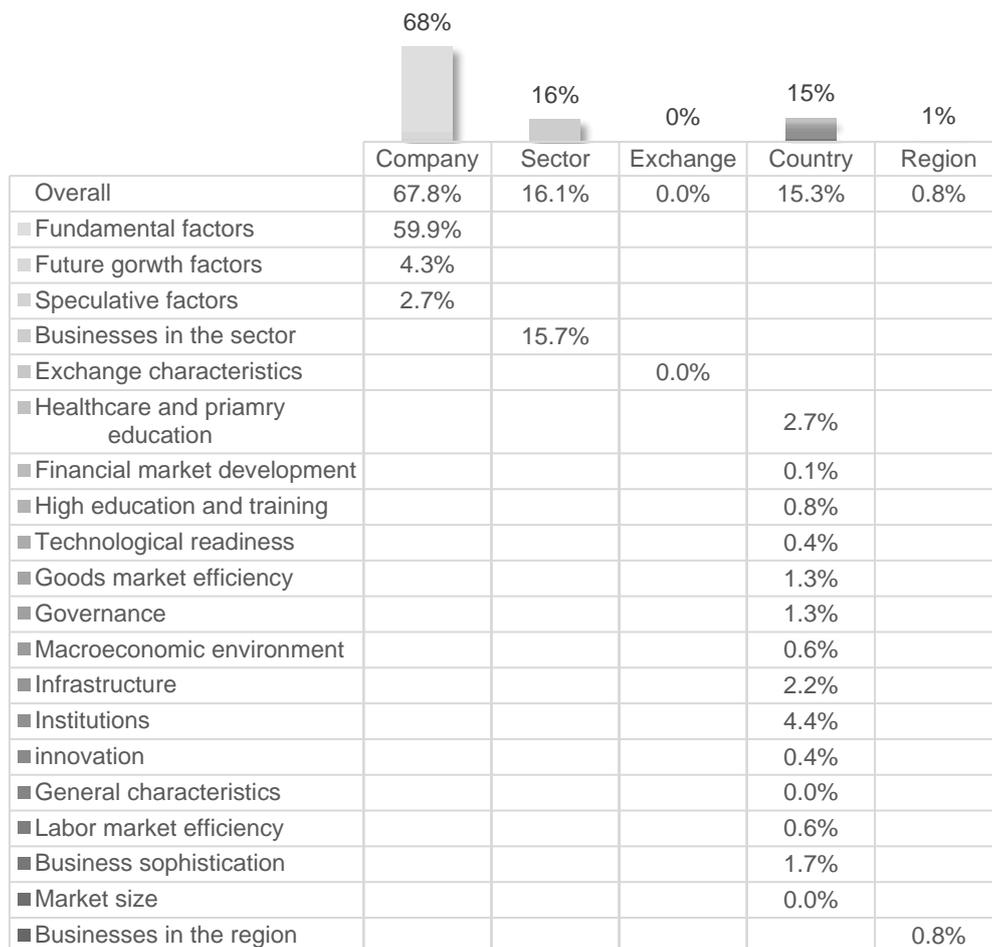


Figure 3. Overall importance of factors for business valuation

Source: Author's analysis

5. Conclusion

The research showed empirical evidence that several factors affect how capital markets value businesses. These factors include company characteristics (68%), sector and region (16% and 1% respectively) and country (15%). Two out of these four groups of factors, namely sector and region, are out of control of countries and businesses there. However, they have control over factors that weight 83% in total. This empirical observation strengthens the notion that governments and businesses joint efforts can influence valuation of businesses under interest. The analysis showed that factors that directly impact how business is done are important from both companies and countries perspective.

Based on the model, the businesses strategies for value enhancement should mainly focus on improving business fundamentals, while speculative factors such as exchange selection and others should be also considered. From government's perspective, besides improving business environment and strengthening general state of economy, the government should also focus on improving efficiency of goods and financial markets locally, and take strategic part in upgrading governance and business practices in the country.

As a final remark, it should be noted that presented model should not be considered as a replacement to full-fledged business valuation methods, but rather as a tool for businesses and governments to choose areas to focus their strategic efforts on to achieve optimal valuation of businesses.

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