# Managing the "Intangibles": Business and Entrepreneurship Perspectives in a Global Context

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# Similarities and differences in the capital structure of the transformation industry and commerce in Mexico

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## Abstract

The purpose of this research was to determine the mathematical relation between, the financial country factors and the financial enterprise factors incorporating debt in the enterprise capital structure, used for the transformation and commerce companies sectors that quoted on the Mexican Stock Exchange in 2000-2011 periods.
The long term debt was the dependent variable and through the E-views 7.0 program, the panel data technique was applied in order to determine the mathematical relation between the independent factors.
The mathematical model and the factors for this empirical study were identified and used in the research as discussion into the theoretical framework

**Keywords:** Capital structure, Factors of the company, Factors of the country

## Introduction

The research, is motivated because of the absence of policies, rules or models into the real life of the enterprises to generate their own capital structure, implying the reviewing of theories, the empirical studies, the existing hypotheses, the major postulates, to determine their its mathematical relationship between debt and the capital structure. Thus, we established a solid foundation to the problem, the questioning and the established objectives. The studies of the capital structure in Mexico are fundamental, because the lack of a robust model to explain the financial decisions in the Mexican organizations, particularly in the transformation and commerce companies sectors, justify this research.

## Theoretical framework

The existence or not of an optimal capital structure for the companies, as well the way it should be determined, has been one of the most controversial topics of financial literature since Modigliani and Miller (1958), published their article and showed their propositions of the irrelevance of the capital structure to the value of the enterprise. It has been 56 years since the publication of the seminal work that gave origin to corporate finances as we know nowadays and at the same time caused that capital structures studies caught so much attention from the economy and financial areas. However, the broad research done on the capital structure theory, to this day, is no conclusive in answers. The theoretical models developed during the last years, have tried since to validate and generalize sometimes, the thesis of the irrelevance of Modigliani and Miller (1958); other times, the models have been tried to adjust the thesis of maximum indebtedness of Modigliani and Miller (1963). From the convergence of both lines of research on the decade of the 60's emerged a renovated theory of the capital structure postulating the existence of an optimal structure to the proposed problem. In this research were reviewed the following theories: optimal capital structure, Theory of the Fiscal Tax Base, Theory of the Asymmetric Information, The Theory of the Agency Costs, The Free Cash Flow Theory, The *Pecking Order Theory* (POT); This last theory was formally proposed by Myers (1984), based in the preliminary work of Donaldson. (1961).

The empirical studies that support all the above mentioned theories, were also reviewed, highlighting among others, the studies done by Rajan and Zingales (1995), and the study of Wald (1999), these studies offered empirical evidence for G-7 countries. They were analyzed some institutional factors of the company, such as: The total assets (size of the firm), profit, sales (growth rate), and the capital (risk).

In the empirical studies, as well as the financial theories, the knowledge has increased and evolved; however, in the different researches done hasn't been achieved the construction of a model that includes jointly all the factors considered capital structure determinants, among the published investigations, we can mention the ones made Filbeck and Gorman (2000), Bradley, Chung (1993), Van el Der (1989), Kester (1986), Harrel and Kim (1984).

The empirical evidence suggests that besides the specific factors of the company also the macroeconomic factors or institutionals of each country are important of the capital structure (Booth L., Aivazian, V., Demirguc-Kunt, A. and Maksimovic, V. (2001), Antoniou, Guney, and Paudyal (2008), Gaytan and Bonales (2009), Dias, Thosiro and Cruz, (2009), Dias and Toshiro (2009). Nevertheless, the most part of the theoretical debate and empirical about the incorporation of the debt in the capital structure, has stayed conditioned by well-developed the capital markets and with a financial architecture well structured, Singales (2000).

Arias, M., Arias, L., Pelayo and Cobián (2009), argued that is necessary to do an specialized research about this matter in the Mexican companies with the purpose of achieving a better understanding about their contracting and debt decisions, in order to design financial instruments adequate to their financial needs and to facilitate and support their growth.

**The capital structure and the macroeconomic or institutional factors of the country**
The recent empirical evidence suggests that the specific factors of every country are important aspects in forming the capital structure in the company of emerging markets, (Booth, Aivazian, Demirguc-Kunt and Maksimovic, (2001); Antoniou, Guney and Paudyal, (2008); Gaytan y Bonales (2009); Dias, Thosiro and Cruz, (2009); Dias y Toshiro (2009). Suggest that the specific factors in the explanation of decisions of contracting debt of the company are related to the economic environment and institutional mechanisms of each country, as the financial sector, the tax system, the legal system and the accounting practices.

In the studies done about the main factors of the country, considered as determinants in building the capital structure of the companies, has been found that they have a significant impact, among others the following factors: i) The Fiscal tax rate ), ii) la inflation, iii) the interest rate and iv) the exchange rate. For that reason of the investigation of the commercial sector the four macroeconomic and institutional factors were considered.

**Capital structure and the microeconomic factors of the company**
It has been looked for to identify the specific factors of the company that could be relevant aspects forming their capital structure, with the purpose of proving the validity of the theories supporting them. Among the factors of the company that can act as significant in forming the capital structure, in the empirical studies done by Dias, Toshiro and Cruz. Gaytán and Bonales (2009), Dias and Toshiro (2009), it has been found a significant evidence incorporating debt in the capital structure, in the following factors: i) Total assets, ii) operation profit iii) capital, and iv) net sales. For that reason the 4 factors were also considered.

# Hypothesis

The fiscal tax rate, the interest rate, the operation profit, the exchange rate and the capital are factors that are negatively related; on the contrary the inflation, the total assets and the net sales are factors that are positively related, incorporating debt in the capital structure used by the companies of the transformation and commerce sectors in Mexico.

# Methodology

The econometric model of the panel data was chosen and used to calculate the mathematical relationship of the factors, the sample of the factors was used for the period from 2000 to 2011, the technique of this model combines data of temporary dimension and cross-section cut. The model is also known as longitudinal joint, gathered data, times series and cross-section, micro-panel data, history analysis and peer analysis. (Gujarati, 2003).

The technique of the panel data can develop and test complex models, According to Carrascal is applicable to the following areas a) Sales prediction, b) Cost studies, c) Financial analysis, d) Macroeconomic prediction, e) Simulation, f) Analysis and evaluation of any type of statistical data. Also allows to observe the causal inferences of the independent and dependent factors, these inferences of causality would be difficult to understand if only applied in isolation technique of "cross-sectional data" or the technique of "time series data". The analysis of panel data,

simultaneously gathers the study of the cross-section cut and the times series studies capture the heterogeneity and the economic agents incorporating the dynamic analysis. (Rivera, 2007)(Mayorga & Muñoz, 2000).

The fundamental characteristic of the panel data is the fact of monitoring the same companies in a continuous period of time. (Wooldridge, 2001).

The analysis of the panel data studies the data set, putting together the cross section cut and the time series. The available information is processed and presented in two dimensions, generating multiple observations for each economic unit, enriching the empirical analysis. (Rivera, 2007), (Mayorga and Muñoz 2000), (Gujarati, 2003), (Mur and Angulo, 2006), (Rivera, 2007).

The model recognizes two effects, on one hand the effects that are unequally affected to each of the study agents contained in the sample, on the other hand, the temporary effects that equally affect all individual units of study that do not vary over time, allowing to study changes in the benefits of a single company over a period of time and the variety of benefits of several companies. (Pindyck, 2001).

## Source and data collection

The specific variables of the companies were obtained from the financial statements published in the financial yearbook of the Mexican Stock Exchange, the source is very reliable, according to the specific laws, the companies listed on the Stock Exchange have the obligation to generate reports at the end of each quarter (Schneider, 2001). The macroeconomic data were obtained by databases and publications made by the Bank of Mexico.

The study simple was not probabilistic, because all the companies from the transformation and commerce sector that were listed in 2000-2011 periods were considered. According to the stratification of the Official Journal of the Federation of Mexico, published in June 2009, for its size, all are classified as large companies.

This research considered the dependent variable: The Long-Term Liabilities. We also considered eight independent variables, of which four are company-specific variables: Total Assets, Net Sales, Operating Income and Capital, and the other four are the country's macroeconomic variables: Tax Rate (ISR), Interest Rate, Inflation and Exchange rate.

## Analysis and interpretation of results

After applying the multivariate technique of panel data, that involved the dependent and independent variables, the economic model showed the existence of a high correlation between the independent variables, causing multicolineality. Is, some independent variables showed a significance greater than 5%. So the null hypothesis was not rejected. The null hypothesis for each complementary hypothesis was defined as: $H_{o:}$ $B_i = 0$, where $i$ is the independent variable to the level of significance of 5%.

**Stepwise Method.** The application of the method allowed us identifies the variables that improve the levels of adjustment and models explanation. The redefined model to commerce sector only included the following independent variables: Total Assets, Operating Income, Interest Rate and Inflation. The redefined model to transformation sector only included the following independent variables: Sales, Capital, Income Tax.

**Test (VIF).** The inflation factor of the variables variance must be less than 10. The (VIF) result showed 12.05, being outside the range.

The test was repeated, considering only the variables of the redefined models after applying the stepwise method. The result showed a decrease in the average variance inflation factor to 3.14, for the commerce sector and 3.38 for the transformation sector which are within the acceptable range test. (Table 1).

TABLE 1

| Commerce Sector (VIF) With significant variables | | | Transformation Sector (VIF) With significant variables | | |
|---|---|---|---|---|---|
| **Variable** | **VIF** | **1/VIF** | **Variable** | **VIF** | **1/VIF** |

| | | | | |
|---|---|---|---|---|
| **Total Assets** | 4.36 | 0.229298 | | |
| **Operating Income** | 4.24 | 0.235796 | **Sales** | 4.57 | 0.218794 |
| **Interest Rate** | 2.01 | 0.497772 | **Capital** | 4,52 | 0.221061 |
| **Inflation** | 1.93 | 0.517326 | **Income Tax** | 1.05 | 0.952139 |
| **Mean VIF** | **3.14** | | **Mean VIF** | **3.38** | |

**Hausman Test.** A regression of panel data with random effects with the purpose of generating the needed information to apply the Hausman Test. The result of the Hausman test used in this research is the multivariate technique of panel data (fixed effects).

**The multivariate technique of panel data.** The final results for the commerce sector and transformation sector after adjusting and applying the econometric model through the panel technique, are shown in tables No. 2 and No.3.

TABLE 2: FINAL RESULTS OF COMMERCE SECTOR, AFTER APPLYING THE DATA PANEL TECHNIQUE, USING THE E-VIEWS 7.0 PROGRAM

| Dependent Variable: Long-Term Liabilities | | | | |
|---|---|---|---|---|
| Method: Pooled EGLS (Cross-section weights) | | | | |
| Date: 02/06/14   Time: 13:44 | | | | |
| Sample: 2000 2011 | | | | |
| Included observations: 12 | | | | |
| Cross-sections included: 15 | | | | |
| Total pool (balanced) observations: 180 | | | | |
| Linear estimation after one-step weighting matrix | | | | |
| White cross-section standard errors & covariance (d.f. corrected) | | | | |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | 314985.0 | 272477.8 | 1.156003 | 0.2494 |
| **TOTAL ASSESTS** | **0.157299** | 0.016871 | 9.323756 | **0.0000** |
| **OPERATING INCOME.** | **-0.252990** | 0.091978 | -2.750544 | **0.0066** |
| **INTEREST RATE** | **-5285144.** | 2399800. | -2.202327 | **0.0291** |
| **INFLATION** | **11248057** | 5429215. | 2.071765 | **0.0399** |
| Fixed Effects (Cross) | | | | |
| Cross-section fixed (dummy variables) | | | | |
| | Weighted Statistics | | | |
| R-squared | 0.930496 | Mean dependent var | | 5443466. |
| **Adjusted R-squared** | **0.922725** | S.D. dependent var | | 5805642. |
| S.E. of regression | 1934190. | Sum squared resid | | 6.02E+14 |
| F-statistic | 119.7446 | Durbin-Watson stat | | 1.088966 |
| Prob(F-statistic) | 0.000000 | | | |

The multivariate regression of panel data (fixed effects), shows that the parity and the equity have a negative correlation and the total assets have a positive correlation incorporating the long term liabilities; the model shows an explanatory capacity of 0.9227.

TABLE 3: FINAL RESULTS OF TRANSFORMATION SECTOR, AFTER APPLYING THE DATA PANEL TECHNIQUE, USING THE E-VIEWS 7.0 PROGRAM

**Dependent Variable: PASIVO?**
Method: Pooled EGLS (Cross-section weights)
Date: 06/02/14   Time: 08:25
Sample: 2000 2011
Included observations: 12
Cross-sections included: 15
Total pool (balanced) observations: 180
Linear estimation after one-step weighting matrix
White cross-section standard errors & covariance (d.f. corrected)

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | -782542.0 | 1087551. | -0.719545 | 0.4728 |
| **SALES?** | 0.801076 | 0.062063 | 12.90755 | **0.0000** |
| **INCOME TAX?** | 7971954. | 1157863. | 6.885055 | **0.0000** |
| **CAPITAL?** | -0.637534 | 0.085102 | -7.491423 | **0.0000** |
| Fixed Effects (Cross) | | | | |
| Cross-section fixed (dummy variables) | | | | |
| Weighted Statistics | | | | |
| R-squared | 0.949560 | Mean dependent var | | 11425987 |
| **Adjusted R-squared** | **0.944267** | S.D. dependent var | | 11793290 |
| S.E. of regression | 3595107. | Sum squared resid | | 2.09E+15 |
| F-statistic | 179.3977 | Durbin-Watson stat | | 0.839599 |
| Prob(F-statistic) | 0.000000 | | | |

Source:  Own elaboration base on financial data of the Mexican Stock Exchange 2000-2011

The multivariate regression of panel data (fixed effects), shows that the sales and the income tax have a positive correlation and the capital have a negative correlation incorporating the long term liabilities; the model shows an explanatory capacity of 0.9442.

TABLE 4: FACTORS THAT HAVE MATHEMATICAL RELATION, INCORPORATING DEBT IN THE CAPITAL STRUCTURE OF THE COMMERCE SECTOR COMPANIES

| CONCEPT | TOTAL ASSETS (+) | PROFIT (-) | INTEREST RATE (-) | INFLATION (-) |
|---|---|---|---|---|
| SIGNIFICANCE | *** | ** | ** | ** |

Source: Own elaboration with the results of the STATA-11 program, (table 2)

**Total Assets.** In the commercial sector, we obtained a positive mathematical relationship of total assets with long-term liabilities. The total assets seem to be the most important factor in financing, especially for long-term debt, (Vigrén, 2009). This result agrees with the results shown in the classic article on this issue at the international level of Rajan and Zingales (1995), who researched the fundamental aspects of the capital structure of the company for the (G-7) countries during the period 1987-1991, finding that the total asset is a factor to incorporate debt, arguing that large companies tend to have a higher level of indebtedness. Other researchers like Frank and Goyal (2009), as well as Dias, Toshiro and Cruz. (2009) and Dias and Toshiro (2009), who obtained evidence in Latin American companies, including Mexican, agree with Rajan and Zingales.

**The Profit.** In the commercial sector, the result shows that operating income as a factor in the inclusion of debt, to form the capital structure has a negative relationship, this result agrees with those obtained by (Jordan, Lowe and Taylor, 1998), (Philisophov and Philosophov 1999), who found, the profit is negatively related to the debt.

**Risk Free Interest Rate.** In the commercial sector, the result shows that Risk free interest rate is negatively related with the incorporation of liability (debt or leverage), matching the results of studies conducted by Barry , Mann, Mihov, and Rodriguez (2008), who found that firms issue more debt when interest rates are lower than historical levels.

**Inflation** In the commercial sector, the result shows that inflation has a positive mathematical relationship with the incorporation of liability (debt or leverage), this result coincides with the result obtained by Gaytan and Bonales (2009), the study of multinational companies belonging to the electronics industry, established in the state of Jalisco, Mexico, they also found that the inflation rate has a positive relationship to incorporate debt in capital structure.

TABLE 5: FACTORS THAT HAVE MATHEMATICAL RELATION, INCORPORATING DEBT IN THE CAPITAL STRUCTURE OF THE TRANSFORMATION SECTOR

| CONCEPTO | SALES (+) | INCOME TAX (-) | CAPITAL (-) |
|---|---|---|---|
| SIGNIFICANCE | *** | *** | *** |

Source: Own elaboration with the results of the E-Views 7.0 program, (Table No.3)

**Capital.** The application of the statistic proves the affirmation that the formulated hypothesis holds, the countable capital is related in a negative way in the decisions that incorporate the debt of the transformation companies. Those results, agree with Mason´s job (1990), Friendly Lang (1988), the important founds that they got from the United States, match with the obtained results in this empiric study, showing negative meaning related to the passive long term.

**Income tax.** Statistical results, indicates that Income Tax Rate is positively, confirming that tax advantage of the total financing cost through borrowing has been exploited by companies transformation sector. The results confirm that the traditional approach to the tax advantage or trade-off between equity and borrowed funds, suggesting an optimal or equilibrium relationship between them, has lost ground to other theories as he states in his research (Myers 1984).

**Sales.** Transformation industry has a positive mathematical relationship that this study determine yet. It coinciding with the results obtained Hall, Hutchinson, and Michaelas (2000), who studied 3,500 small and medium enterprises (SMEs) in the UK unlisted Stocks, and using the percentage increase in sales volume growth as an indicator variable, found that the level of short-term debt is positively related to growth of the company. It also coincides with the results of other authors such as Rajan and Zingales (1995) and Myers (1977).

## Conclusions

The research reached its purpose to identify the positive or negative relationship of the quantitative factors between the debt and the capital structure into transformation and commercial companies sectors and they are participating in the period 2000 to 2011 Mexican stock market. The model of the transformation companies was proved with the statistical technique of "panel data", and was adjusted means of the dependent variable: The Long-Term Liabilities and as independent variables: Sales, Capital and Income Tax.

The model of the commerce companies was proved with the statistical technique of "panel data", and was adjusted means of the dependent variable: The Long-Term Liabilities and as independent variables: Total Assets, Operating Income, Interest Rate and Inflation.

The results are useful for generating standards and guidelines, facilitating decision-making by incorporating debt in the capital structure of companies in the transformation and commercial sector in Mexico. The results will decrease uncertainty and support decisions in tangible and intangible assets of investment projects done by companies in the transformation and commercial sector.

Factors emanating from the qualitative characteristics such as culture, power, country risk, and personal values, are aspects that can influence and change the results, which is why we suggest to be included in future research.

# References

[1] Antoniou, A., Guney, Y., y Paudyal, K. (2008). The Determinants of Capital Structure: Capital Market-Oriented versus Bank-Oriented Institutions. *Journal of Financial and Quantitative Analysis,* 43(1), 59-92.

[2] Arias, M., Arias, L., Pelayo, M., Cobián, S. (2009). Factores Institucionales que Influyen en la Decisión de Estructura de Capital de las Empresas en México. *Expresión Económica*, (22), 49-63.

[3] Booth, L., Aivazian, V., Demirguc-Kunt, A. and Maksimovic, V. (2001). Capital Structures in Developing Countries. *Journal of Finance*, 56(1), 87-130.

[4] Bradley, M., Gregg, A., Jarrell, E., y Kim, E. H. (1984). On the Existence of an Optimal Capital Structure: Theory and Evidence. *Journal of Finance*, 39(3), 887-878.

[5] Censos Económicos (2009). Resultados Oportunos. *Instituto Nacional de Estadística y Geografía (INEGI)*. Recuperado de www.inegi.org.mx.

[6] Cobacho, M. B. y Bosch, M. (2004). Métodos lineales de estimación con datos de panel: una aplicación al estudio de los efectos de la inversión pública federal en México. XII Jornadas de ASEPUMA

[7] Dias, D., Thosiro, W., Cruz, L. (2009). Determinants of Capital Structure of Publicly-Traded Companies in Latin America: the Role of Institutional and Macroeconomic Factors. *Journal of International Finance and Economics*, 9(3), 24-39.

[8] Dias, D. y Toshiro, W. (2009). Determinantes da Estrutura de Capital das Companhias Abertas no Brasil, México e Chile no período 2001-2006. *Revista Contabilidade & Finanças,* 20(50), 75-94.

[9] Filbeck, G. Raymond F. Gorman, R. F. (2000). "Capital Structure and Asset Utilization: The Case of Resource Intensive Industries". *Review of Economics and Finance,* 26 (4), 211-228.

[10] Frank, M. y Goyal, V. (2000). Testing the Pecking Order Theory of Capital Structure. Mimeo, *Social Science Research Network (SSRN)*.

[11] Frank, M. y Goyal, V. (2009). Capital Structure Decisions: Which Factors Reliably Important?. *Financial Management, Spring,* 1-37.

[12] Gaytán, J. y Bonales, J. (2009). *La Estructura de Capital En Filiales de Empresas Multinacionales de la Electrónica en Jalisco, Bajo Condiciones de Incertidumbre.* México: Universidad de Guadalajara.

[13] Hall, G., Hutchinson, P., y Michaelas, N. (2000). Industry Effects on the Determinants of Unquoted SMEs' Capital Structure. *International Journal of the Economics of Business*, 7(3), 297-312.

[14] Mayorga, M. y Muñoz, E. (2000). La técnica de datos de panel una guía para su uso e interpretación. Banco Central de Costa Rica. Departamento de investigaciones económicas

[15] Modigliani, F. y Miller, M. (1958). The Cost of Capital, Corporation Finance and the Theory of Investment. *American Economic Review*, 68(3), 261-297.

[16] Mur, J. and Angulo A.M. (2006). The Spatial Durbin Model and the Common Factor Tests. *Spatial Economic Analysis*, 1(2), 207-226.

[17] Organización Mundial de Comercio (OMC). (2009). Informe del comportamiento del sector de servicios en el mundo. Recuperado de http://www.mincomercio.gov.co/econtent/newsdetail.asp?id =5393&idcompany=1

[18] Ozkan, A. (2001). Determinants of Capital Structure and Adjustment to Long Run Target: Evidence from UK Company Panel Data. *Journal of Business Finance & Accounting*, 28(1/2), 175-198.

[19] PEA (INEGI, 2001), Comportamiento del sector de servicios en México. Recuperado de http://www.inegi.org.mx/inegi/contenidos/espanol/prensa/comunicados/servbol.asp

[20] Pindyck, R. y Rubinfeld, D. (2001). *Econometría: Modelos y Pronósticos.* México: MC-Graw Hill, 4ta edición.

[21] Rivera, J. (2007). Estructura Financiera y Factores Determinantes de la Estructura de Capital de las PYMES del Sector de Confecciones del Valle de Cuenca en el Período 2000-2004. *Cuadernos de Administración Bogotá (Colombia),* 20(34), 191-219.

[22] Schneider, F. (2001). Determinantes del apalancamiento: los efectos del TLCAN sobre la estructura financiera de las empresas de la BMV. *Gaceta de Economía,* 6(11), 99-147

[23] Sogorb, F. (2002). *Estudio de los Determinantes de la Estructura de Capital de las Pymes: Aproximación Empírica al Caso Español.* España: Tesis Doctoral, publicada en la Universidad de Alicante.

[24] Vigrén, A. (2009). *Capital Structure of Finnish SMEs and Financial Constraints.* Lappeenranta:  Master's Thesis, School of Business.

[25] Wooldridge, J. (2001). *Introducción a la Econometría: un Enfoque Moderno.* México: Internacional Thomson Editores.

[26] Zingales, L. (2000). In Search of New Foundations. *Journal of Finance*, 55(4), 1623-1653.

# Economic tools induced by real estate development process in Visegrad Countries

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## Abstract

**Economic tools induced by real estate development process are principally additional fees from development projects realized in particular land. These charges reflect the inducing costs that are directly associated with the development process and exceeds the scope of realized projects. This issue is related particularly the distribution of costs and benefits from development activities. This paper is focused on economic instruments in real estate development process in selected Visegrad countries of Central and Eastern European region – Slovakia, Czech Republic, Hungary and Poland.**

**Land plays a key role in development projects. Conversely, land use plans and development process significantly affect the monetary value of land. Price and value of the land is differently perceived by developer or investor and otherwise is perceived by the landowner. With increasing value of land, owners can through higher prices for their subsequent divestiture anticipate their further increases. If the land owner does not take any capital appreciation on their property, the profit from the resale of property may be regarded as purely speculative profit. Such activity of owners should be at least partially controlled by the public sector in order to prevent unhealthy influencing of the land market.**

**Key words:** real estate development, Visegrad countries, development fees, induced costs.

## Introduction

The main objective of this paper is to pointing out to weaknesses and critical assessment of the legislative environment, economic, planning and executive instruments relating to land in real estate development processes in Visegrad countries - the Slovak Republic, the Czech Republic, Hungary and Poland. At the outset, it should be added that the situation on this issue in these countries is very similar.

The methodology of this paper is based on an analysis of the theoretical bases of economic instruments related to real estate development in the area.

Research Method of the contribution is based on empirical research - gathering information for analysis of the current stage of issues. It is also based on collection of primary and secondary data about the economic and legislative instruments which are relating to development process and land development in selected countries. These analyzes were performed on available publications of foreign and domestic authors that relate to the research problems.

## A Brief overview of the real estate market in Visegrad Countries

The real estate market in Visegrad Countries for the last more than twenty years has developed and undergone a long period of change. From the collective ownership of land, which was one of the main factors of production and the main idea of communist ideology through privatization and restructuring has passed on personal ownership of the land. However, this process has many shortcomings, such as the problem of identifying the original owners, whom the land had been unjustly taken and insufficient records in the land cadastres. Nevertheless, the last 20 years in Central and Eastern Europe there was a huge real estate boom, as evidenced by the amount of development projects both domestic and foreign companies.

In the early nineties, in the former socialist countries have become real estate development very disorganized and often reckless real estate competition. Commercial real estate transactions were primarily the result of direct

negotiations between buyer and seller, which is increasingly more carried out with the contribution of lawyers, because these operations have become much more complicated.

Land plays a key role in real estate development projects. Differently is perceived the price and value of the property by the developer or investor, and differently is perceived by the landowner. This raises for instance problems arising from the two values of land, but only one price. Therefore it is necessary the importance of coordination objectives of public and private sector in the development of a land use plan and development activities in the area.

Global land use and tax issues in recent decades have become much more complex. The introduction of breakdowns, planning and permitting system created ambiguity in the definition of private and socially created land values (Connellan, 2004). In other words, difficulties arise in separating and measuring of public and private components of land value. It may even be impossible to completely separate these two components of values, because of the changing technology and social norms create new property forms (Malme, Youngman, 2001).

Development process and any real estate development in the area implies a certain burden for a given land with which it is closely linked inducing additional cost to the developer beyond these processes. In contrast, the view of the municipality, these costs can be described as conditional investments or brought investments. There are various forms how investor should co-finance brought investments or related investments of public sector, or how he shall pay a tax or fee for improvement the creditworthiness of the property from public investment. A similar principle existed in Slovakia until 1989, when it was necessary for the larger investments to define, quantify and appreciate conditional and related investments for transport, technical equipment and community amenities (Nižňanský, 2013). Precisely this issue is very actual and need for its solution is more than necessary.

## Development fees in Visegrad countries

Among the most common brought investments (or conditional investments) may include, for instance expansion or reconstruction of: transport infrastructure in the area of implemented a development project; the technical infrastructure (utilities - water networks, electricity networks, gas networks, waste management networks, etc.); the immediate surroundings of the project (playgrounds, sports fields, parks, benches, etc.).

Realization of those investments is shifting on the shoulders of public institutions, from which is expected that it will be covered from their budgets or possibly by means of loans, or in transition from EU funds. However, this approach burdens of all urban residents while benefits from the investment have only developers or limited range of living or new urban residents (Nižňanský, 2013).

Debate about what costs the developer must be added to the basic project usually takes place in the preparatory phase of the project. This issue in a concrete form enters when the application for planning permission is realized and when government gives binding statements. At this stage both parties must reach a consensus how to deal with and brought investment. Especially nowadays at the time of the real estate crisis and weakened interest in apartments or office spaces and increased price sensitivity of buyers is the debate considerably more difficult. Developers are pushing for even greater cost reduction of their projects.

Officially, there are formal and informal instruments which the municipality has available when dealing with the developers. Among the formal instruments include the local plan, including land use plans of zones and regulatory plans of municipality in which are specified limits concerning the maximum building-up of land, buildings distance from the road (street line), number of storeys of buildings, fence heights, greenery, slope of roofs, colour of roofs, etc. Binding regulations defining the future shape of urban and architectural division of new locations - e.g. minimum width and shape of roads, emphasis on clearance limit of streets (during winter maintenance), etc.

On the contrary among informal instruments can be included negotiations between the municipality and the developer about the design of new construction; about brought investments related to the planned development project - specifically the construction of new transport and technical infrastructure, the extension of existing transport and technical infrastructure, about realization of public buildings (schools, parks and other green spaces, public spaces, etc.) (Temelová, Puldová, 2010).

It should be added that, as well as in Visegrad Countries there is an absence of a set of informal planning tools at the local level, abroad known as Land Management. Land management it is perceived as system of informal land use and executive instruments, which is a comprehensive tool for guiding spatial development and also information platform for achieving consensual as well sustainable solutions in cross-sectional wide range of demand for land.

In general we can say that local authorities currently do not have any instruments that would enable effective negotiation with investors or developers. One of the reasons for this unsatisfactory situation in relation to local authorities and developers in the Czech Republic, Slovakia, Hungary and Poland is legislative environment of these countries and legislative tools that municipalities and local authorities have or rather they don't have available tools for effective negotiation with developers. The only tool at present by which consensus can be reached between municipalities and developers' regarding reimbursement of costs for technical infrastructure and public facilities associated with new construction is negotiation.

This has resulted in some negative aspects, such as, persuading investors to the realization of investments that often are not related to development activities. This often leads to attempts to influence municipal authorities in case of remission of additional investment and to corrupt practices. On the contrary, investors and developers are often pushed to absurd expenditure in case of disagreement with the requirements of municipalities (Nižňanský, 2013).

One possible solution offers the opportunity to draw inspiration from countries where the mentioned instruments are sufficiently developed. In Western European countries such as the Netherlands, Great Britain and Germany, the situation is vastly different. There are ongoing extensive discussions to individual developer's intention between local authorities and representatives of investors, which are governed by the nationwide rules. This concerns in particular the philosophy of a consensus in the rules towards to both negotiating parties succeeded as accurately as possible quantify external costs incurred in land as a result of realized investments.

Local politicians set the general rules how high developer contributions to infrastructure are expected to receive and officials shall be responsible for the negotiation with investors about these contributions. For example, in the Great Britain without the conclusion of a legally binding contract between the developer and the local authority investor does not get building permission, which obviously is not sufficiently effective mechanism to negotiate terms that are advantageous for the local authority. Thus, the negotiated conditions shall not apply to only to an investor who is committed to them, but it concerns to the land upon which the investment is realized. So if investor sells the land, the commitments remain valid also for the new owner. In case the investor tries to ask for some mitigation of obligations under the Contract with the local authority, the local authority may consider his request (Lepš, 2010). However, it is important to mention that there is also significant passivity on the side of developers in area for further development of the land (brought investments) where the activity is often postponed only to the municipality or to the network administrators.

In Slovakia is currently preparing forthcoming proposal of Act on charge for real estate development and amending and supplementing Act no. 583/2004 Coll. about financial rules of local governments and amending and supplementing certain laws, as amended, of which the proposer is The Union of Towns and Cities of Slovakia. This proposal is based on the concept of development fees (also exists e.g. in the UK and the Netherlands), which determines the participation of stake-holders in land development through the construction of technical and social infrastructure.

The creators of this proposal recommend implementing the issue of development fees into the law, instead of leaving the powers of this issue only in the negotiations between the municipality and the investor, despite the fact that this method is most often applied in other European countries. As reason for recommendation they referred the definition of clear rules for the main stakeholders: the municipality - the investor; acquisition of private resources for the execution of conditional and brought investment; and reduce corruption.

Development fees represent local taxes paid by investors, undertaking the construction of a particular object in the issuance of building permits. The fee is designed to cover capital costs due to investments related with a particular building, concerning the subsequent increased demand for services for which it is responsible government, therefore to build up, modernize or capacity expansion of local transport infra-structure, technical and social infrastructure. Within the structure of fees are distinguished the individual purposes, so that the payer knows how much of the total amount of paid fee applies for a particular purpose. By fees are charged housing and investment construction, with the general exceptions for: hospitals; religious buildings; construction of buildings associated with agriculture; expansion of industrial buildings with a floor area not exceeding 50% of the existing floor area (Nižňanský, 2013).

In the Czech Republic the existing instrument of Planning Agreement was introduced in "new" Construction Act (Act no. 183/2006) three years ago and allows to avoid mentioned problems. Planning agreement is a legally binding agreement about the participation of the applicant to build new or modifying old public infrastructure (Fibiger, 2009). Planning agreement closes municipality (or region) with the applicant for the purposes of implementation of regulatory plan. Cur-rent legislation allows in the zoning plan defining the areas for which is the processing and issuance of a regulatory plan is necessary condition for making decisions about changes in the land and at the same time condition of realization plan by entering into a planning agreement. So the developer can be force to land development in relation to the size of the planned project to build adequate public infrastructure of sufficient quality and in a reasonable period. There is no reason to believe that the planning agreement may only be used in case of lucrative sites where the developer is negotiating with municipalities and he is more willing to accept the conditions. Municipalities should use this planning instrument in all larger housing projects. It is necessary to avoid then a number of undesirable consequences of new construction, whether on physical, social and natural environment. Planning agreement may municipality enforce even without regulation plan within the process of zoning proceedings on the basis of § 88 of the Building Act, which says: "Building Authority interrupts zoning proceedings, except for reasons stated in the Administrative Regulations, also if the task puts such requirements for public transport and technical infrastructure that cannot be realized without the construction of new buildings and facilities or modifications of the existing, and also request the applicant to submit a planning agreement" (Macešková, 2009).

In Hungary, is not implemented any development fee to developers or investors. According to the Act LXXVIII of 1997 on the protection of the built environment, the municipality has the right to sign a contract with the owner of the future property. In competitive procedures could be established agreements in what proportion of costs will investor participate in the investment implications.

In Poland there are no specific fees for investors on sharing of costs from the investment construction, except fees from building permits and construction project. Owners should participate only in the costs of public infrastructure developed by local authorities. The public infrastructure fee is calculated on the basis of the increase in the value of a property due to the development of infrastructure and a percentage rate adopted by the city council (not to exceed 50%). The payment of the fee may be imposed by the city council within 3 years following the development of the infrastructure. The decision imposing the fee may be appealed against to the appeal committee and further to the administrative courts.

It is worth noting that the holders of the perpetual usufruct right do not participate in these costs. It is deemed that the perpetual usufruct fee covers the costs of public infrastructure (CMS Cameron McKenna, 2005).

## Conclusion

The Visegrad model suffers from many infirmities such as lack of regulation in the form of spatial plans of zones; deficiencies in land cadastres; absence of cadastral information and publicly available in-formation about market property prices; lack of economic instruments; weak planning system towards the protection of the public interest; lack of levers and rules which would allow local authorities to effectively negotiate with investors and the existence of a huge space for a backroom deals or even corrupt behaviour.

The aim, therefore, is to achieve a state in which local authorities would have been able to consistently quantify the external costs of the development project - the necessary investment to transportation, education and other services and to have effective tools to transfer these costs to the investor. Above mentioned principles are only the basics, which by per se cannot solve the existing problems. With legislative and other instruments is inseparably connected the level of political culture, the way of public discussion on planned development projects and land-use planning or methods to ensure the accountability of politicians and officials to the public.

## Acknowledgements

## References

[1] CMS Cameron McKenna. (2005). Developer's guide to Poland. Second edition 2005/2006. Available on: http://www.cms-cmck.com/Hubbard.FileSystem/files/Publication/fe7d1dd7-cace-419c-aa53-ba0a4bbe03e9/Presentation/PublicationAttachment/9d7618fa-bf73-4a6d-bccc-7b905fa6299f/developerguide2ndedition.pdf

[2] Connellan, O. (2004). Land Value Taxation in Britain. Experience and Opportunities. Lincoln Institute of Land Policy. Cambridge, Massachusetts. ISBN 1-55844-157-3

[3] Fibiger J. (2009). Jak na suburbanizaci. *Stručný návod pro starosty, zastupitele, úředníky a občany.* Available on: http://www.agora-ce.cz/archive_files/Dokumenty_ke_stazeni/Jak_na_suburbanizaci.pdf

[4] Lepš J. (2010). Developerské projekty a místní infrastruktura: Lekce z Velké Británie. Available on: http://www.top09.cz/regiony/praha/regionalni-organizace/praha-11/medialni-vystupy/developerske-projekty-a-mistni-infrastruktura-lekce-z-velke-britanie-3772.html

[5] Macešková M. (2009). Nástroj pro usměrňování územního rozvoje obce: nebojte se plánovací smlouvy. *Suburbanizace.cz.* ISSN 1803-8239. p. 1-2

[6] Malme J. H., Youngman J. M. (2001). The Development of Property Taxation in Economies in Transition. *World Bank Publications.* ISBN-13: 978-0-8213-4983-0

[7] Nižňanský V. (2013). Rozvojové poplatky. *Komunálne výskumné a poradenské centrum, n.o. Piešťany.* 9 p.

[8] Temelová J., Puldová P. (2010). Rezidenční výstavba v obci Bradlec: přístup ke spolupráci obce s developerem. *Suburbanizace.cz.* ISSN 1803-8239. 11 p.