The impact of taxation on company value

Author: Alexandra Fodor
Coordinator: Ion Stancu

Abstract: Taxation is one of the central topics of the current economy and also is a key issue in managing a business. The study of this work started the following questions: "Does the tax system influence the value and the performance of the company? And if so, what kind of influence and by what mechanism?"

It is almost obvious the influence of taxation on firms, at least in terms of income or tax profit, which by definition, is taking a compulsory, part of the income or wealth of a person.

After analyzing a number of 47 romanian companies from various fields, we conducted a panel database that helped us in finding a weak negative relationship between the two central elements analyzed.

Keywords: tax, profit tax, social contributions, financial performance, effective tax rate, financial profitability, company value

Introduction

Taxation in a legal sense, represents the regulations on the establishment and functioning of the levies in the form of taxes and mandatory contributions from financial funds administered by public authorities and in an economic sense, taxation represents all economic processes for the distribution of Gross Domestic Product (GDP) from individuals and legal entities to meet the needs of public character by allocating resources.

Citizens are required to contribute through taxes to public expenditure, as legal persons have the same obligation. But the problem is put for the impact of this obligation to the state and also the benefits of tax regulations on businesses, profitability and firm value.

State intervention in the companies finance may be achieved also through administrative measures with direct impact on business taxation. In Romania, we can remember in the administrative measures, the financial control of tax that ensures a competitive environment in terms of tax evasion punishment fiscal, the application of valuation methods set by the State for fixed assets, granting exemptions, rebates, deferrals and rescheduling the payment of taxes for certain categories of companies, establishment of systems for depreciation of fixed assets for the benefit of economic agents and grants, referred to as negative taxes.
Literature review

Taxation is more than the taxes and duties levied by the State from every person individually. In Romania, not just behind taxes, are hidden a series of calculations of the tax base, a series of tax breaks but also economic and political constraints.

One of the most important forms of payment for the obligations of a company is tax profits, and Nicodeme in his work, explains the importance of this tax in society.

In Romania, corporate taxation relate primarily to profit tax for companies or enterprises’ income tax, as noted above, but also to a series of tax deductibility (material consumption deduction, the deduction of interest and deductibility of depreciation of fixed assets) and social contributions. Each of these have an impact on companies and their value: tax impacting the company value, primarily through its components, in particular the tax base, calculated in different ways according to the law, when the social contributions have a major impact on firms’ remuneration policy, particularly because fiscal reforms, which require contributions from both the protected person and the legal person – the employer.

To submit my case study, I will consider a number of empirical studies primarily explaining the term of company value. After studying literature, we have concluded that the value management studied by Black (1998) initially, speaks about a representation of the value of the company by its performance. This thinking was supported by other authors, who argued about the primary objective of the business finance also in terms of performance. Rappaport (1998) supports the ideas presented above with the stakeholder theory, that explains that the stakeholders are not only interested in the value-considered an abstract term, but also in the performance of the companies. Thus, we found that rates of return on equity (ROA and ROE) are most suitable for performance measurement, which is why we chose one of them, namely ROE, to be used in the actual case study.

Regarding the quantification limit of taxation, this could be achieved in three main ways: the nominal tax rate / statutory effective rate used in studies such as those by M. Devereux, or implicit tax rate. After studying specific articles, we chose to use an effective tax rate of profit as the main form of corporate taxation, since it uses to calculate the taxable base and tax paid.

The impact of taxation on the company has been studied over the years both in terms of performance fluctuation, as well as the impact of taxes on how to finance the company, their balance sheet structure or dividends policies or business organization.

The impact at the micro and macroeconomic taxation has been studied in a certain proportion by Pricewaterhouse Coopers (PWC) in 2012, in a survey called "15th Annual Global CEO Survey 2012", which analyzed the potential threats to companies in the world; more exactly - it analyzes a number of 1,250 companies in 60 countries. Thus, it compiled a list of microeconomic and macroeconomic factors, which could have a negative impact, in general, the performance and value of companies. Taxation has a high importance in a company, the tax burden having a significant impact on company performance, in Eastern Europe this threat being in top 4 out of 10 threats considered by management companies in the area.
In the recent studies, we find information about a positive relationship between profitability and effective tax rate (Richardson & Lanis, 2005; Liu & Cao, 2007). Therefore, it seems more profitable firms have higher ETR, although most often, managers may wish accounting revenue growth and at the same time reducing taxable income. Mahenthiran & Kasipillai (2011) argue that profitable companies can have more incentives and opportunities to reduce the tax burden through tax deductions and therefore may be involved in tax evasion strategies; they can engage in aggressive tax planning due to increases in free cash flows.

One of the first studies on capital structure, impacted by taxation, was approached by Modigliani and Miller (1963), in a paper entitled "Corporate Income: Taxes and the Cost of Capital: A Correction", which is actually a correction of the initial study were taken as assumptions absence of taxation and impairment model that resulted in indifference in choosing how to finance companies.

The impact of taxation on firms from different countries, especially on their profits, was studied by Schwellnus and Jens Arnold, in 2008, in a work that uses a stratified sample of firms in OECD economies for the period 1996-2004, to analyze tax effects on productivity and investment. By applying an estimation strategy which exploits the differential impacts of tax income on firms with different rates of profitability, it appears that corporate taxes have a negative effect on productivity at the firm level. The effect is negative for companies of different sizes and ages, except small and young firms, which it can be attributed to the relatively low profitability specific to very small.

Another paper written by Derashid and Zhang, in 2003 studies the relationship between taxation and firm, given a broader set of possible factors, on list of companies from Malaysia, from the KLSE stockexchange market, between 1990 and 1999. In this case study, the authors have used elements such as leverage, capital intensity, sector, size and performance, and as the dependent variable- the effective tax rate. The study results showed the high importance of the sector which heavily influences taxation; a decrease in the tax burden was observed for companies dealing with fabrications and from the hotel sector; the result was explained by the long-term industrial policy that protects the manufacturing sector and the recent government policy that promotes the tourism in that country.

For the Malaysian companies, we noted that there is evidence that large firms can pay the tax more efficient than small firms, but the most important conclusion to our analysis is the effect of tax and company performance measured by ROA (Return on Assets). In this sense, it can be seen from the study of Derashid and Zhang, that companies with higher ROA pay lower taxes; this theory is explained by the fact that these companies, although industrial policy can not favor them, they continue to be very profitable.

In 2008, a study by Djankov & Co., shows the relationship between tax, investment and entrepreneurship, for 85 countries. The findings show that the effective corporate tax rates have a significant negative effect on business investment and entrepreneurship. This effect can be defined to be robust if other rates are controled, like the tax income, VAT or the tax on sales, and also whether tax compliance, protection of property rights, openness to trade external economic development, inflation or other regulations are controlled.

In the Romanias’ case, there were few empirical studies supporting the theories mentioned above, in which income taxes once again represents a negative influence on the Romanian economy.
A current study (Vintilă G, 2013), in Romania, confirms the results of other studies available in the literature regarding business confidence index (BCI- Business Confidence Index) and the possible use of the corporate tax burden to forecast the confidence in business. The study concluded that there is a clear relationship between business confidence index and tax burden. The level of tax income, the amount paid by the employer as social contributions and taxes on production and services, all influence BCI confidence index for countries - OECD members. Therefore, any change in the taxation of companies would be reflected in managers' expectations regarding their business and company development.

In 2010, a study by D.C. Oanea and MC Apostoaie highlights the evolution of the relationship between income and investment for Romania from 1990 to 2008, trying to show the particular evolution of each of these two variables studied and the relationships between them, the magnitude of their influence. It was obtained that the two variables are directly related, indicating that a change in investments, will cause changes in the level of tax profit in the same direction.

Another case study, on the impact of a large number of relevant factors, which include the effective tax rate, on the performance of companies from Romania, measured with ROE, is the study of Stancu and Oproiu (2013). In this paper, we analyze the impact of the factors DuPont system degradation - quantitative factors (gross margin and tax rate) and qualitative factors (rotation rate of the asset, inventory, customers and suppliers as well as rate structure capital represented by leverage). Correlation analysis was performed on three pharmaceutical companies listed on the Bucharest Stock Exchange, and the data was taken quarterly. Here, the effective tax rate turned out to be a non-redundant factor, with a probability of 0.6654, being subsequently removed from the final model analysed. But if we ignore the non-correlation of the tax factor and we analyze just the coefficient calculated in Eviews, the tax rate would impact the performance of companies in Romania negatively, by a factor of -0.009471.

**Case study**

As a model for applying the case study, we chose the analysis of the DuPont's reasons of Stancu and Oproiu, to which we added other elements of taxation, such as social contributions.

To study the impact of taxation on the value of the companies on the Bucharest Stock Exchange (BSE) we estimated using the methodology panel date, equation for financial return ROE. The sample used in the regressions that follow, was made up of 47 companies listed on the BSE as companies with shares of class I. The period in which the analysis was conducted is 2010 to 2014, containing quarterly data, resulting in a number of 940 comments.

To test the relationship between the performance of the company and taxation, I will start with the analysis conducted by Stancu and Oproiu trying to change the model according to the needs of testing and the data available:
$\text{ROE} = C(1) + C(2) \cdot \text{ETR} + C(3) \cdot \text{CONTRB} + C(4) \cdot \text{M_NET} + C(5) \cdot \text{A_ROT} + C(6) \cdot \text{REC_ROT} + C(7) \cdot \text{INV_ROT} + C(8) \cdot \text{DLEV} + [\text{CX=R}]$

Where:

$\text{ROE}_i = \text{Return on Equity for the company “i”;}$

$\text{ETR}_i = \text{Effective tax rate for the company “i”;}$

$\text{CONTRB}_i = \text{Social contributions related to salaries for the company “i”;}$

$\text{M_NET}_i = \text{Net margin of profit for the company “i”;}$

$\text{A_ROT} = \text{Sales to assets for the company “i”;}$

$\text{INV_ROT}_i = \text{Inventory turnover for the company “i”;}$

$\text{REC_ROT}_i = \text{Receivable turnover for the company “i”;}$

$\text{PAY_ROT}_i = \text{Payable turnover for the company “i”;}$

$\text{LEV}_i = \text{Leverage of debt/ debts to equity for the company “i”.}$

For objective reasons, we chose to eliminate operational expenditure share in turnover because of underreporting their separate profit and loss account and subsequently after entering the data in Eviews, we have eliminated the payable turnover, due to lack of data for most companies.

First, we tested the correlation of the influence factors to verify if the considered variables determine each other or are independent.

The only medium correlation we can find between variables A_ROT and LEV (46.84%) - is positive. We also find some correlations relatively medium to weak- between asset rotation (A_ROT) and social contributions (CONTRB) (-25.17%) and also between A_ROT and REC_ROT; the correlation that exists is due to the fact that a significant part of the total assets are receivables.

The remaining correlations are week (between 0.0 and 0.25 in absolute values) both proportional (+) and inverse (-), not being analyzed further.

In terms of studies undertaken in the past, linked to the relation between ETR and other company specific indicators, we see that the relationship between financial leverage and effective tax rate turns out to be negative, like in Modigliani and Miller (1963), Kraft (2014) and other economist’s studies. Thus, with large debts within a company, it will benefit from discounts from the interest tax deductions, in this case the structure formed a high proportion of debt is desired.

A negative relationship also appeared between the size of the companies, represented by the asset turnover rate and ETR. This conclusion is in line with Siegfried’s theory of political power (1972), which explains this correlation as due to the power of large companies to manage their tax planning through tax experts or by optimizing the activities undertaken. The same conclusion was taken by Nicodeme (2007) in his study on EU companies.

We can conclude from the above that the independent variables analyzed are not redundant and can properly characterize a relationship with the dependent variable (ROE), to the extent that this relation will prove statistically significant. After running in Eviews the model shown above, with fixed specifications, pointing out the most conclusive, according to Hausman test, we find the following ideas:
After estimating the regression with fixed effects we achieved a probability lower than 0.05 (0.0000), indicating the presence of fixed effects in the regression.

- F test – statistically, it registered a value of 9.5133, and the probability of the test (F-statistic) has a very low value of 0.0000 (below the level of relevance - 5% or 10%), proving that the regression model is very good and that at least one of the coefficients of the regression is statistically significant;
- Durbin-Watson statistic’s registers a value below the critical threshold of 2 (1.4141), indicating that the residuals are easily correlated. A possible explanation of this fact can be that on the analyzed period, the Durbin-Watson is not significant and can’t be interpreted.
- R-squared value and Adjusted R-squared values are about satisfactory (40.15% and 35.93%), meaning that approximately 40.15% of the variation in the company’s performance and value can be explained by variation in the explanatory variables mentioned in the model; worth mentioning is that relatively small amount (less than 50%) of the indicator indicates that ROE can be explained by other variables, in addition to those already mentioned.

From the first regression model analyzed, it can be seen that the only statistically significant are the following factors:
- ETR (3.78% probability)
- CONTRB (0.5% probability)
- M_NET (0% probability)
- A_ROT (0.01% probability)
- DLEV (5.87% probability), if we take into consideration a significance level of 10%.

Next, we will try to keep only the statistically significant independent variables, and make a new model, that we hope will have a stronger relevance. The second model will analyze, will have the following form:

$$ ROE = C(1) + C(2)* ETR + C(3)* CONTRB + C(4)* M_NET + C(5)* A_ROT + C(6)* DLEV + [CX=R] $$

From the Hausman test, it showed that in the case of the second model, the specifications with fixed effects are more relevant, with a probability of 0.0000 to accept null hypothesis. Thus, we will run the model with fixed effects, as follows:
Dependent Variable: ROE
Method: Panel Least Squares
Date: 06/01/15   Time: 23:30
Sample (adjusted): 2010Q2 2014Q4
Periods included: 19
Cross-sections included: 49
Total panel (unbalanced) observations: 845

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.006128</td>
<td>0.003228</td>
<td>1.898589</td>
<td>0.0580</td>
</tr>
<tr>
<td>ETR</td>
<td>-0.002325</td>
<td>0.002311</td>
<td>-1.006363</td>
<td>0.0345</td>
</tr>
<tr>
<td>CONTRB</td>
<td>-0.024264</td>
<td>0.006852</td>
<td>-3.541207</td>
<td>0.0004</td>
</tr>
<tr>
<td>M_NET</td>
<td>0.023536</td>
<td>0.001884</td>
<td>12.49172</td>
<td>0.0000</td>
</tr>
<tr>
<td>A_ROT</td>
<td>0.063431</td>
<td>0.012480</td>
<td>5.082685</td>
<td>0.0000</td>
</tr>
<tr>
<td>DLEV</td>
<td>-0.007429</td>
<td>0.003548</td>
<td>-2.094090</td>
<td>0.0366</td>
</tr>
</tbody>
</table>

Effects Specification
Cross-section fixed (dummy variables)

<table>
<thead>
<tr>
<th>R-squared</th>
<th>0.408531</th>
<th>Mean dependent var</th>
<th>0.010925</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjusted R-squared</td>
<td>0.368900</td>
<td>S.D. dependent var</td>
<td>0.045702</td>
</tr>
<tr>
<td>S.E. of regression</td>
<td>0.036306</td>
<td>Akaike info criterion</td>
<td>-3.731871</td>
</tr>
<tr>
<td>Sum squared resid</td>
<td>1.042663</td>
<td>Schwarz criterion</td>
<td>-3.429002</td>
</tr>
<tr>
<td>Log likelihood</td>
<td>1630.716</td>
<td>Hannan-Quinn criter.</td>
<td>-3.615824</td>
</tr>
<tr>
<td>F-statistic</td>
<td>10.30844</td>
<td>Durbin-Watson stat</td>
<td>1.442374</td>
</tr>
<tr>
<td>Prob(F-statistic)</td>
<td>0.000000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table: Testing the significance for model 2 - fixed effect

After analyzing regression model no. 2, the results obtained through econometric modeling and represented in the above table reveal the following:

- F test - statistically registered a value of 10.3084, superior value to model no. 1 and the probability of the test (F - statistic) has a value of 0.0000 (below the level of relevance - 5% or 10% ), showing that it is a 0% probability that the model to be dropped and that at least one of the coefficients of the regression is statistically significant;
Durbin-Watson statistic’s registers a value below the critical threshold of 2 (1.4423), indicating that the residuals are easily correlated;  
- R-squared value, and Adjusted R-squared values are approximately satisfactory and higher than the model no.1 (40.85% versus 40.15%, and 35.93% against 36.89%), meaning that approximately 40.85% of the performance variation and value of the company can be explained by variation of the explanatory variables listed in the model.
- From the above mentioned model refer to the following correlations:
  - Negative correlation between ROE and ETR;
  - Negative correlation between ROE and CONTRB;
  - A positive correlation between ROE and explanatory variables based on the system DuPont- M_NET and A_ROT system;
  - Negative correlation between ROE and DLEV (first difference of financial leverage indicator).

Even if we have achieved an improvement in the parameters of the regression model, we have a 60% unexplained residual determination of the selected factors However, our study relates to the impact of taxation on companies.

From the presented results, it appears that there is a negative correlation between taxation of profit / rate of social contributions and the value of company represented by the return on equity (ROE), negative regression coefficients but relatively small (0.002 for ETR and - 0.024 for CONTRB) confirming the negative impact of higher tax burden affecting companies on their value.

Conclusion

Studying both the impact of taxation on growth and indirect on the company by the effects of rising opportunities on companies or the direct impact on firms, we refer to a generally negative correlation. Taxation has been positioned by Pricewaterhouse Coopers as one of the main threats for the economy, while Mahenthiran & Kasipillai (2011), Schwellnus and Jens Arnold (2008), Derashid and Zhang (2003), Djankov & Co (2008) conducted actual case studies on firms, and found a negative correlation, explained by the fact that more profitable firms may have more incentives and opportunities to reduce the tax burden through tax deductions and therefore may be involved in tax evasion strategies.

For my study, the regression coefficient obtained is accordance with the findings of previous studies (Schwellnus and Jens Arnold (2008), Derashid and Zhang (2003), Djankov & Co (2008), Siegfried (1972), Watts and Zimmerman (1978), Nicodeme (2007), etc.).

So, in companies listed in Romania, on the Bucharest Stock Exchange (BVB), the increase in the tax income rate by 1% will lead to a decrease in the rate of return on capital companies (ROE) of 0.002 percentage points. And for contributions, the increase of the share of social contributions in the total turnover of a company by 1%, will affect ROE in the sense of decreasing its’ value with 0.024 percentage points.

This, in economic terms, can be explained by decreasing enterprise profits when increasing the corporate tax rate and also the same ideology is implemented in the case of the
social contributions, which enterprise decreases profit, in terms of wages and social contributions expenditures for employees. Since profit is a result of the difference between revenue and expenses and companies taxes / their duties and the profitability or the financial profitability of companies is directly proportional to their profits, it is normal for an increase in taxes of any kind, to fall profitability.

From my point of view, it is desirable in the future to boost the activity of companies from Romania, so that taxation should not mean a threat to the economy, such as those supported by the PWC study, but to find a balance between state revenues gained largely from the incomes of firms, which have a higher power to pay than individuals, and companies specific tax incentives, so as to boost the economic development of the country and also to promote a policy of supporting small business. Offering larger tax facilities could help in the future the fight with tax evasion, more and more dominant in Romania, which is currently trying to be combated through a very aggressive policy, by increasing the number and the value of taxes on companies, which discourages their development and often resulting in closures of companies.

Bibliography:

Books:
7. Niculae Feleagă și Liliana Malciu, Politici și opțiuni contabile, Editura Economică, București, 2002;

Articles:
4 Chirculescu, F.M., Dobrota, G. (2009) – Introducing taxation policy of profit for companies in Romania and other European Union member states, Constantin Brâncuși University of Targu-Jiu, MPRA Paper No. 17530
6 Christina Elschner, Werner Vanborren, Corporate Effective Tax rates in an Enlarged European Union, Taxation Papers, European Union, 2009;
9 Delivering results – Growth and Value in a volatile world, PWC, 15th Annual Global CEO Survey 2012;
10 Derashid, C., Zhang, H. – Effective tax rates and the "industrial policy" hypothesis: evidence from Malaysia, Journal of International Accounting, Auditing & Taxation 12 (2003);
16 G.Vintila et al., Studiu privind corelatia politica fiscala-responsabilitate sociala corporativa, Economie teoretica si aplicata, Volumu XIX, 2012
24 Kunst, R., Nell, Ch., Zimmermann, S. (2011) - Summary based on Chapter 12 of Baltagi: n Panel Unit Root Tests; Department of Economics at University of Vienna; Vienna;
29 Mărgulescu, Dumitru- Analiza operării mecanismelor fiscalității asupra performanței economico-financiare a firmei, Editura ASE, teză de doctorat, București, 2006;
30 Marsh, D. G. (1999), Making or breaking value, New Zealand Management, March 1999;
32 Modigliani, F. And Miller, M.H. (1963) – Taxes and the Cost of Capital; A Correction ; American Economic Review 53 (June);
34 Nicodeme, G. – Corporate Income Tax and Economic Distortions, Taxation Papers, European Commision, Centre Emile Bernheim (Solvay Business School), Luxembourg, April 2006;
37 Norme metodologice din 22/01/2004 de aplicare a Legii nr. 571/2003 privind Codul fiscal, publicată în Monitorul Oficial, Partea I nr. 112 din 06/02/2004, pct. 71;
39 PriceWaterHouseCoopers, Fiscalitatea in Romania, Editie de buzunar, Editia 2014
42 Schwellnus, C. and Jens, A. – Do Corporate Taxes produce Productivity and Investment at the Firm Level? Cross-Country Evidence from the Amadeus Dataset, Economic
Department Working Papers No 641, Organisation for Economic Co-operation and Development, September 2008;
46 Stancu, I., Stancu, D., Oproiu, Al. – Studiu empiric privind factorii determinați ai performanței financiare a întreprinderii – Sistemul DuPont, Audit Financiar, 7/2013;
47 Tax policy challenges for economic growth and fiscal sustenability, European Economy 5/2011;
48 Tulvinschi, M. (2012)- Amortizarea imobilizărilor prin prisma impozitelor amânate, Economia teoretică și aplicată, Vol XIX (2012), No. 7(572);
50 Vintila. G., - The Impact of Tax Pressure on Companies’ Performance Case Study: OECD Europe Zone, 2013;

Legislation:
*** Constituția României, art. 56;
*** Legea 571/2003 coroborată cu HG 44/2004 privind CODUL FISCAL CU NORMELE METODOLOGICE DE APLICARE actualizat prin Ordonanța de urgență a Guvernului nr. 6 din 7aprilie 2015;
International Accounting Standard 12- Income taxes;

Sites:
www.bvb.ro
http://www.theanalysisfactor.com/covariance-matrices/
Official sites of the companies
Whereas the comparison of net present values shows the impact of taxation on the level and ranking of the present values, it is unsettled how an appropriate measure for the effective tax burden can be constructed. The measurement of the 6 See, e.g., OECD (1991); European Commission (1992). Hence, the value of the firm at each moment is \( V = \frac{D}{r} = 20 \). Now we assume that the company decreases its distributions in \( t = 0 \) by the amount of one. It does so to carry out an additional investment financed by retained earnings, which earns a rate of return of \( p \). In \( t = 1 \), the corporation generates additional proceeds \( (p + \delta) = 0.45 \) from the invested capital.