

# EFFECTIVE TAX BURDEN BORNE BY COMPANIES: A REVIEW AND A NEW METHODOLOGY

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*Measuring the effective tax burden of companies was appealing to many famous economists. The present paper makes a review of the methodology used in assessing the tax burden of companies, and starting from this point, proposes a new framework based on micro backward-looking methodology, which extends the fiscal variables taken into account by considering the tax savings generated by alternative ways of personnel remuneration such various vouchers granted to employers. This line of research is in accordance with the extension of tax incentives granted to companies that lower the fiscal burden, but are not taken into consideration when computing the effective tax rate borne by companies. Some partial results of the research show that the magnitude of such tax incentives can be quite significant, but the research has to be extended to a larger sample of firms.*

*Keywords: effective tax burden, micro backward-looking methodology, alternative ways of personnel remuneration*

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## **Effective tax burden: a review**

The problem of tax incidence on corporations is one of large interest in the academic world, having its beginnings in the works of Modigliani and Miller. Later, important contributions were made by Hall and Jorgenson, Harberger, Stiglitz, King, DeAngelo and Masulis, Auerbach, Poterba, Devereux, Shah, Summers, Desai and many others. An excellent review can be found in Graham, John R.<sup>384</sup>. Key areas of interest focused on the incidence of taxation on financial structure (Modigliani & Miller, Stiglitz, DeAngelo & Masulis), the enterprise value (Auerbach), the cost and return on investment (Hall & Jorgenson, Summers), the location of enterprises and investment (Devereux, Shah), the fiscal adjustment and financial results (Desai), etc. One can notice a tendency to extend the tax variables taken into account: if the initial research aimed at taking into account only corporate income tax, later the research area was expanded by including the dividend tax, capital gains tax, in pursuing the integration of corporate income tax and personal income tax, and thus determine the tax incidence both on companies level and investors level. Also, the diversification of fiscal techniques resulted in taking into consideration various tax incentives such investment tax credit.

In line with these developments, in the context of globalization in recent years, research conducted worldwide focused on determination of effective tax rates of companies, which often is very different than statutory rate set by the existing legal framework. Enterprises have become increasingly concerned to maximize available tax benefits, and decreasing tax liabilities through legal means of payment (tax sheltering).

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<sup>384</sup> Graham, John R. - A Review of Taxes and Corporate Finance, *Foundations and Trends in Finance*, Vol 1, No. 7 (2006).

Currently, there are two major orientations to determine the average effective tax rate borne by companies:

**The first orientation** is based on data from financial reports (so-called micro backward-looking methodology), in which effective tax rate is determined as the ratio between tax liabilities and income (profits) current. Important contributions were made by Collins and Shackelford<sup>385</sup>, Buijink, W., Janssen, B., Schols, Y.<sup>386</sup> and Nicodème, G.<sup>387</sup>.

Collins, J.H. and D.A. Shackelford (1995) manage to classify countries surveyed in decreasing order of the tax burden borne by companies in the following order: Japan, UK, USA and Canada. They also show their evolution over time of these effective tax rates, at the confluence of the reduction in statutory tax rates and increase the tax base.

The study of Buijink, W., Janssen, B., Schols, Y. (2002) is among the first ones based on the consolidated financial information of EU companies that try to capture their real tax burden. They see the difference between statutory tax rate and effective rate as an indicator of fiscal facilities that benefit enterprises. They calculated three types of effective tax rates: tax / taxable income, tax / net turnover, tax - deferred tax / taxable income. Their conclusions are: tax facilities differ substantially among EU countries and the differences between effective tax rates among member states are greater than those between statutory rates.

Gaetan Nicodème (2007) compared effective tax rates for 11 EU countries (EU 15 less Greece, Luxembourg, Ireland and UK), USA and Japan. He uses the unconsolidated financial information to better capture the specific national tax framework and expand the number of companies included in survey. The conclusions he reached may be summarized as follows: in Europe, the effective tax rates, calculated after Martinez-Mongay (2000)<sup>388</sup>, as the ratio between tax and gross operating profit are no higher than those the U.S. and Japan; over the period of the 90's, although increased, the effective tax rates in Europe remained significantly below those of two other major economic powers. In Europe, countries with the highest taxation are Germany, Italy, Denmark and the Netherlands, while in Austria and Sweden (surprisingly) the tax burden of companies is lower. Also, energy and water sector, transportation and communication enjoy an easy fiscal charge, while trade is charged more heavily.

**The second orientation** is based on neoclassical investment theory, where the average effective tax rate depends on effective marginal tax rate and capital cost (user cost of capital - see Hall and Jorgenson) - so-called micro forward-looking methodology. It aims to assess effective tax burden supported by investment projects, based on a methodology initiated by King and Fullerton<sup>389</sup> and further developed by Devereux and Griffith<sup>390</sup>. Recent developments of this methodology takes into account restrictions imposed by tax

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<sup>385</sup> Collins, J.H. and D.A. Shackelford (1995) - Corporate Domicile and Average Effective Tax Rates: The Cases of Canada, Japan, the UK and USA, *International Tax and Public Finance*, Vol 2, 55-83.

<sup>386</sup> Buijink, W., Janssen, B., Schols, Y. (2002) - Evidence of the effect of domicile on corporate average effective tax rates in the European Union, *Journal of International Accounting, Auditing and Taxation*, 11, 115-130.

<sup>387</sup> Nicodème, G. (2007) - Comparing Effective Corporate Tax Rates, *Frontiers in Finance and Economics*, Volume 4 (2007), Issue 2, 102-131.

<sup>388</sup> Martinez-Mongay, C. - The ECFIN Effective Tax Rates, Properties and Comparisons with Other Tax Indicators, *Economic Paper*, No 146, European Commission.

<sup>389</sup> King, MA and D. Fullerton (1984) - The Taxation of Income from Capital, Chicago: University of Chicago Press.

<sup>390</sup> Devereux, Michael P. and Rachel Griffith (1999) - The Taxation of Discrete Investment Choices, Revision 2 - The Institute For Fiscal Studies *Working Paper Series* No. W98/16.

authorities in some countries to not affect the net result with tax savings realized by the enterprise as a result of various facilities that can benefit (Polito, Vito, 2009<sup>391</sup>).

Research conducted worldwide is based heavily on this methodology. Even European Commission<sup>392</sup>.

The study of Oestereicher, Andreas, Timo Reister and Christoph Spengel (2009)<sup>393</sup>, based on a powerful research tool called European Tax Analyzer - ETA - developed by the research team at ZEW (Center for European Economic Research) Mannheim, contains Romania's situation in terms of effective average tax burden of Romanian companies. According to the methodology Devereux & Griffith, Romania ranks 4 in Europe, both in large enterprises, and small and medium size enterprises. But the study did not consider social contributions, which, in our opinion, would be likely to fundamentally change the conclusions.

### **The new methodology regarding effective tax burden**

The methodology proposed consists in determining effective tax rates by taking into account tax incentives and tax savings generated by various instruments such alternative personnel remuneration. The same company may have different financial ratios in the absence/presence of these tax incentives/savings, and this is likely to lead to further clarification on the incidence of fiscal variables on financial management of enterprises. At this point, it should be noted that researches undertaken so far *not quantify the alternative ways of personnel remuneration in determining the overall effective tax rate of enterprises*. The effective tax rate we propose is based on micro backward-looking methodology and is computed as a *ratio between taxes paid by companies and gross operating profit*. When sizing the taxes borne by companies we consider tax savings generated by alternative personnel remuneration. Basically, we will compute the effective tax rates in these two ways and will try to identify the differences between them and the impact of such tax incentives on overall performances of companies. The decision of a company to pay its employers using alternative forms such different kind of vouchers bears a strong tax incentive, as these vouchers can not borne any social contributions payments. Thus, the effective tax rate is smaller than that of a company who decides to pay its employers in cash.

$$ETR_1 = \frac{Taxes}{Gross\_operating\_profit}$$

$$ETR_2 = \frac{Taxes - Tax\_savings}{Gross\_operating\_profit}$$

The tax savings generated by alternative personnel remuneration (such meal vouchers) have to be computed. The general belief says that this form of remuneration is negligible,

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<sup>391</sup> Polito, Vito (2009) - Measuring the Effective Tax Burden in the Real World, *Fiscal Studies*, Volume 30, Number 2, June 2009, pp 247-278 (32), Blackwell Publishing).

<sup>392</sup> Commission of the European Communities (2001) - Company Taxation in the Internal Market, available at

[http://ec.europa.eu/taxation\\_customs/resources/documents/company\\_tax\\_study\\_en.pdf](http://ec.europa.eu/taxation_customs/resources/documents/company_tax_study_en.pdf).

<sup>393</sup> Oestereicher, Andreas, Timo Reister and Christoph Spengel (2009), Common Corporate Tax Base (CCTB) and Effective Tax burdens in the EU Member States, *ZEW Discussion Paper*, No. 09-026, Mannheim, available at <ftp://ftp.zew.de/pub/zew-docs/dp/dp09026.pdf> and later in *World Tax Journal*, 46-66).

but we will show that its magnitude is underestimated, and the effects on the overall performance of a company may be quite significant. We use gross operating profit as it is more relevant for company's core activities. The tax savings incurred by meal vouchers remuneration are depicted in the following formula:

$$TS = c_g MV, \text{ where,}$$

$c_g$  = global social contributions rate;

MV = meal vouchers granted to employers.

In principle, data concerning meal vouchers granted to employers are available in the financial reports of listed companies. Social contributions borne by companies include those for pensions, unemployment, medical services, work accidents and occupational diseases, vacations and indemnities, and for payment of wage claims. The rates usually vary on annual basis depending on fiscal legislation.

In order to compute the effective tax rates in the two variants depicted above, we will use the financial data for Aerostar company for fiscal years 2007 and 2008.

Table no. 1. Relevant financial data for Aerostar company during 2007 and 2008

		2007	2008
1	Gross operating profit (RON)	10,021,848	6,666,747
2	Corporate income tax (RON)	771,691	1,581,534
3	Other taxes (RON)	1,068,799	1,062,281
4	Social contributions (RON)	11,121,992	12,047,148
5	Meal vouchers (RON)	2,737,340	2,855,417
6	Global social contributions rate (RON)	31.6%	29.35%
7	Tax savings (RON)	864,999.44	838,064.88
8	$ETR_1 (2+3)/1$	18.36%	39.66%
9	$ETR_2 (2+3-7)/1$	9.73%	27.62%
10	Tax savings/Gross operating profit (7/1)	8.63%	12.57%

Source of data: S.C. Aerostar S.A. Financial Reports available at <http://www.aerostar.ro/financiar.php?PHPSESSID=a6deb4c8d97d80f06a5a67108a2b29fb;>

One can notice the differences between the two effective tax rates, which are quite significant (from 18.36% to 9.73% in 2007, respectively from 39.66% to 27.62% in 2008). Moreover, if the company did not choose to pay the employers using vouchers, its gross operating profit would have been lower by 8.63 percents and 12.57 percents respectively. So, using such alternative personnel remunerations schemes determines an increase in gross operating profit, as the company capitalizes the tax savings generated by such instruments.

This is only one example that illustrates this new methodology that we proposed. To be relevant, the study must be extended by taking into consideration a sample of companies for which data are available. Generally, listed companies provide such data, so, this may be a good starting point. Unfortunately, there is no source of data that can provide all-in-one information related to tax incentives granted to companies in various forms, and, by consequence, such a study will have to surpass the difficulty of getting the necessary data.

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