ECONSTOR
Make Your Publications Visible.

A Service of

ZBW Leibniz-Informationszentrum Wirtschaft
Leibniz Information Centre for Economics

Spengel, Christoph; Lazar, Sebastian; Evers, Lisa; Zinn, Benedikt

Working Paper

Romania's development to a low-tax country: Effective corporate tax burden in Romania from 1992 to 2010 and Romania's current ranking among the eastern European member states

ZEW Discussion Papers, No. 12-003

Provided in Cooperation with:
ZEW - Leibniz Centre for European Economic Research

Suggested Citation: Spengel, Christoph; Lazar, Sebastian; Evers, Lisa; Zinn, Benedikt (2012) : Romania's development to a low-tax country: Effective corporate tax burden in Romania from 1992 to 2010 and Romania's current ranking among the eastern European member states, ZEW Discussion Papers, No. 12-003, Zentrum für Europäische Wirtschaftsforschung (ZEW), Mannheim

This Version is available at:
https://hdl.handle.net/10419/54980

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

WWW.ECONSTOR.EU

Mitglied der Leibniz-Gemeinschaft

Discussion Paper No. 12-003

Romania's Development to a Low-Tax Country

Effective Corporate Tax Burden in Romania from 1992 to 2010 and Romania's Current Ranking among the Eastern European Member States

Christoph Spengel, Sebastian Lazar,
Lisa Evers, and Benedikt Zinn

ZEW
Zentrum für Europäische Wirtschaftsforschung GmbH
Centre for European Economic Research

Discussion Paper No. 12-003

Romania's Development to a Low-Tax Country

Effective Corporate Tax Burden in Romania from 1992 to 2010 and Romania's Current Ranking among the Eastern European Member States

Christoph Spengel, Sebastian Lazar,
Lisa Evers, and Benedikt Zinn

Download this ZEW Discussion Paper from our ftp server:

http://ftp.zew.de/pub/zew-docs/dp/dp12003.pdf

Die Discussion Papers dienen einer möglichst schnellen Verbreitung von neueren Forschungsarbeiten des ZEW. Die Beiträge liegen in alleiniger Verantwortung der Autoren und stellen nicht notwendigerweise die Meinung des ZEW dar.

Discussion Papers are intended to make results of ZEW research promptly available to other economists in order to encourage discussion and suggestions for revisions. The authors are solely responsible for the contents which do not necessarily represent the opinion of the ZEW.

Non-technical Summary

Among the Member States of the European Union, Romania is considered to be a low tax country. This is mainly due to the fact that the Romanian corporate income tax rate of 16% currently undercuts the average corporate income tax rate in the Member States of the European Union by more than 6 percentage points. Yet, the corporate income tax rate does not give the whole picture as the reduction of corporate income tax rates in many longstanding EU and OECD Member States has in many cases been accompanied by a broadening of the tax base. Further important determinants of the tax burden of corporations that have been affected by tax reform measures implemented in the EU Member States comprise depreciation allowances, rules that restrict the deductibility of interest, and tax provisions that govern the treatment of losses.

Hence, the objective of this paper is to firstly investigate the development of corporate tax law in Romania from 1992 to 2010 in order to highlight the main structural changes of the Romanian company tax system. Secondly, we want to investigate whether these changes are in line with the trend of tax-rate-cut-cum-base-broadening reforms, which has been identified for other Member States of the EU and the OECD.

The descriptive analysis of the development of corporate taxation in Romania from 1992 to 2010 shows that the significant decrease of the corporate income tax rate from 45% in 1992 to 16% since 2005 has been accompanied by a great variety of reform measures pertaining to the tax base of corporate income tax. The most important changes concern the features of corporate tax systems already mentioned above, namely the depreciation allowances, provisions that restrict the deductibility of interest, and the treatment of losses.

Overall, the decrease of the Romanian corporate income tax rate has not been accompanied by a broadening of the corporate income tax base. Compared to the year 1992, the rules currently governing the depreciation allowances for tax purposes, the treatment of dividends and the inter-temporal loss offset are more generous from the perspective of the tax payer. Hence, with respect to the overall picture, the development of corporate taxation in Romania does not fit in with the trend of tax-rate-cut-cum-base-broadening reforms.

Our analysis of corporate taxation in Romania is not limited to a comprehensive description of the development of corporate taxation in Romania, but goes on with a numerical analysis of the tax burdens at different periods of time which constitute milestones in the development of corporate taxation in Romania. The calculations are based on the methodology of the European Tax Analyzer, which has been used in a wide variety of international tax burden comparisons. This paper provides the first application of the European Tax Analyzer in an analysis of the development over time of a transition economy's tax system, namely Romania.

The results presented in table E-1 confirm the expected long-term downward trend of the effective tax burden. Overall, the company tax burden decreased by EUR 29,282,603 (equalling

182.89% relating to the benchmark tax regime 2010) from EUR 45,293,505 under the tax code in effect in 1992 to EUR 16,010,902 in 2010.

The results in table E-1 moreover show that the corporate income tax generally constitutes the main share of the overall tax burden. Accordingly, the impact of non-profit taxes, i.e. the building and land tax, on the overall tax burden is relatively low. The striking decline is, therefore, mainly attributed to the continuous tax rate cuts over the last decades starting from 45% in 1992 to a uniform rate of 16%, which was introduced in 2005 and is still in place today. Furthermore, the quantitative analysis based on the model company confirms the first impression of the qualitative analysis that the reduction of the corporate income tax rate has not been accompanied by a broadening of the corporate income tax base.

When corporations which are characterised by specific sets of financial ratios representing different industries are considered, the results for the base case are generally confirmed. Irrespective of the industry, the findings reveal the general downward trend of the effective tax burden over the last two decades.

Table E-1: Effective tax burdens (Romanian Corporations; 10 periods)

			Impact of particular tax categories on the effective tax burden in %		
	Effective average tax burden (EUR)	**Deviation from 2010 (%)**	**Corporate Income Tax**	**Building Tax**	**Land Tax**
1992	25,034,407	56.36	94.45	5.55	0.00
1992	45,293,505	182.89	97.58	2.42	0.00
1995	38,034,111	137.55	97.08	2.91	0.00
1998	36,434,760	127.56	97.14	2.86	0.00
2003	24,528,502	53.20	95.23	4.60	0.16
2006	16,105,833	0.59	93.82	5.83	0.35
2010	16,010,902		92.73	6.85	0.42

In order to assess the attractiveness of Romania as an investment location from a tax point of view, we finally compare Romania's tax regime in an international context. Focusing on the Central and Eastern European EU accession countries, our analysis reveals Romania's advantageous position in the country ranking. Only Bulgaria provides a significant lower tax burden of EUR 9,961,865, which is mainly due to its significantly lower statutory tax rate of 10% and the beneficial depreciation allowances for buildings and machinery. We eventually analyze possible reform options. Assuming that all other jurisdictions do not amend their tax system, a corporate income tax rate of approximately 9.5% would not only place Romania ahead of Bulgaria but also on top of the overall European country ranking.

Das Wichtigste in Kürze

Rumänien gilt innerhalb der Europäischen Union als Niedrigsteuerland. Dies ist in erster Linie auf den niedrigen Körperschaftsteuersatz von 16% zurückzuführen, der den im Jahr 2010 geltenden durchschnittlichen Körperschaftsteuersatz in der EU um mehr als 6 Prozentpunkte unterschreitet. Für die steuerliche Standortattraktivität sind jedoch weitere Aspekte des Steuersystems von Relevanz. Diese umfassen insbesondere die Ausgestaltung der Körperschaftsteuerbemessungsgrundlage, die Behandlung von Verlusten und die Erhebung weiterer gewinnabhängiger und gewinnunabhängiger Steuern. Eine Vielzahl der umfassenden Steuerreformen, die einzelne Mitgliedstaaten der EU und der OECD in den vergangenen 20 Jahren umgesetzt haben, zeichnet sich durch eine Senkung des Körperschaftsteuersatzes bei gleichzeitiger Ausweitung der körperschaftsteuerlichen Bemessungsgrundlage aus (so genannte tax-rate-cum-base-broadening Reformen). Die alleinige Betrachtung des Körperschaftsteuersatzes greift daher zu kurz.

Daraus leitet sich die Zielsetzung des Beitrags ab, zum einen die Entwicklung des rumänischen Unternehmenssteuersystems hin zu einem Niedrigsteuerland zu untersuchen und dabei die bedeutendsten strukturellen Veränderungen aufzuzeigen. Zum anderen soll untersucht werden, inwieweit die Entwicklung des rumänischen Unternehmenssteuersystems in den vergangenen 20 Jahren dem weltweiten Trend der tax-rate-cum-base-broadening Steuerreformen entspricht.

Der Überblick über die Entwicklung des rumänischen Körperschaftsteuersystems im Zeitraum von 1992 bis 2010 zeigt, dass die deutliche Senkung des Körperschaftsteuersatzes von 45% im Jahr 1992 auf derzeit 16% von einer Vielzahl weiterer Reformmaßnahmen im Bereich der körperschaftsteuerlichen Bemessungsgrundlage begleitet wurden. Die zahlreichsten und weitreichendsten Änderungen ergaben sich dabei für die steuerlichen Abschreibungen, die Vorschriften zur Beschränkung des Zinsabzugs und die Verlustbehandlung.

Zusammenfassend lässt sich dabei feststellen, dass der Rückgang der tariflichen Steuerbelastung nicht von einer Ausweitung der Bemessungsgrundlage der Körperschaftsteuer begleitet wurde. Im Gegensatz dazu gestalten sich die Abschreibungsvorschriften, die Regelungen zur Verlustbehandlung und die Behandlung von Dividenden zum Rechtsstand 2010 großzügiger als im Jahr 1992. Auf Basis der rein qualitativen Untersuchung des rumänischen Steuerrechts lässt sich daher der Trend der tax-rate-cum-base-broadening Steuerreformen in Bezug auf das rumänische Körperschaftsteuersystem nicht feststellen. Jedoch nimmt auch die Bedeutung der ertragsunabhängigen Steuern, insbesondere der Grundsteuer auf Land, während des Betrachtungszeitraums stetig zu.

Die deskriptive Analyse der Entwicklung des rumänischen Unternehmenssteuersystems wird durch die Analyse der effektiven Unternehmenssteuerbelastung auf Basis des European Tax Analyzers ergänzt. Die effektive Steuerbelastung berücksichtigt über den Körperschaftsteuer-

satz hinaus weitere bedeutsame Merkmale eines Steuersystems und ermöglicht daher eine umfassende Analyse der Besteuerung von Körperschaften in Rumänien.

Die Ergebnisse in Tabelle E-1 bestätigen den erwarteten Rückgang der effektiven Steuerbelastung um EUR 29.282.603 (entspricht 182,89 %) von EUR 45.293.505 im Jahr 1992 auf EUR 16.010.902 im Jahr 2010. Der Körperschaftsteuer fällt dabei zu jedem der betrachteten Jahre das größte Gewicht zu. Folglich ist der Anteil der ertragsunabhängigen Steuern, namentlich der Grundsteuer auf Gebäude und der Grundsteuer auf Land, vergleichsweise gering. Der deutliche Rückgang der effektiven Unternehmenssteuerbelastung ist daher in erster Linie auf die stetige Senkung des Körperschaftsteuersatzes von 45% im Jahr 1992 auf 16% seit dem Jahr 2005 zurückzuführen. Die quantitative Analyse bestätigt zudem für den Ausgangsfall, dass der Rückgang des Körperschaftsteuersatzes nicht durch die Verbreiterung der körperschaftsteuerlichen Bemessungsgrundlage begleitet wurde. Die für den Ausgangsfall abgeleiteten Ergebnisse bestätigen sich im Grundsatz sofern Unternehmen unterschiedlicher Wirtschaftsbereiche betrachtet werden.

Tabelle E-1: Effektive Unternehmenssteuerbelastung (Rumänien, Ebene der Kapitalgesellschaft, 10 Perioden)

	Effektive Durchschnitts-steuerbelastung (EUR)	**Abweichung vom Rechtsstand 2010 (%)**	Einfluss der Steuerarten auf die Durchschnittssteuerbelastung in %		
			Corporate Income Tax	**Building Tax**	**Land Tax**
1992	25.034.407	56,36	94,45	5,55	0,00
1992	45.293.505	182,89	97,58	2,42	0,00
1995	38.034.111	137,55	97,08	2,91	0,00
1998	36.434.760	127,56	97,14	2,86	0,00
2003	24.528.502	53,20	95,23	4,60	0,16
2006	16.105.833	0,59	93,82	5,83	0,35
2010	16.010.902		92,73	6,85	0,42

Der Vergleich der rumänischen Unternehmenssteuerbelastung mit der Steuerbelastung in anderen Mitgliedsstaaten der EU ermöglicht schließlich Rückschlüsse auf die Attraktivität Rumäniens als Investitionsstandort aus steuerlicher Perspektive. In der Gruppe der mittel- und osteuropäischen Beitrittsstaaten der Europäischen Union belegt Rumänien den zweiten Platz im Länderranking. Allein Bulgarien weist mit EUR 9.961.865 eine geringere Unternehmenssteuerbelastung auf. Dies ist in erster Linie auf den mit 10% um sechs Prozentpunkte niedrigeren Körperschaftsteuersatz sowie vorteilhafte Abschreibungsregelungen für Gebäude und Maschinen zurückzuführen.

Romania's Development to a Low-Tax Country

Effective Corporate Tax Burden in Romania from 1992 to 2010 and Romania's Current Ranking among the Eastern European Member States

Christoph Spengel (ZEW Mannheim and University of Mannheim)

Sebastian Lazar (University Al. I. Cuza of Iaşi)

Lisa Evers (ZEW Mannheim)

Benedikt Zinn (ZEW Mannheim)

January 2012

Abstract: We trace back Romania's development to a low-tax country among the Member States of the European Union by analysing the major tax law changes in corporate taxation since 1992. We find that the significant reduction of the corporate income tax rate from 45% in 1992 to 16% since 2005 has not been accompanied by a comprehensive broadening of the corporate income tax base as prevalent in many longstanding Member States of the EU and the OECD. Our analysis is not limited to a comprehensive description of the development of corporate taxation in Romania, but goes on with a numerical analysis of the tax burdens at different periods of time which constitute milestones in the development of corporate taxation in Romania. For this purpose, we apply the European Tax Analyzer, which is a computer-based model firm approach. We find that the average company tax burden of the underlying model company has dropped significantly by almost 65% since 1992. Furthermore, our numerical analysis does not confirm the tax base broadening policy. As a result, Romania holds position two among the group of Central and Eastern European EU Member States.

Acknowledgement: Sebastian Lazăr acknowledges grant PN-II-RU-PD, code 340/2010.

JEL Classification: H22, H25, O38

Keywords: corporate taxation; effective tax burden; transition economy; EU accession countries; tax reform; tax-rate-cum-base-broadening reform

Corresponding authors:
Lisa Evers
ZEW Mannheim
L7, 1
68161 Mannheim
Germany
+49-621-1235-168
evers@zew.de

Sebastian Lazar
Universitatea Al. I. Cuza
B-dul Carol 1 nr. 22
Iasi, 700505
Romania
+40-232-201610
slazar@uaic.ro

1. Introduction

Taxes influence the attractiveness of a jurisdiction as a location for investment. From the perspective of Romania and other new Member States of the European Union, comparably low tax burdens may serve as a means to attract direct investment by foreign multinationals. Accordingly, the statutory tax rate of the Romanian corporate income tax has been decreased significantly in the past two decades from 45% in the year 1992 to 16% applicable since 2005. This is in line with the common trend of decreasing corporate income tax rates among the Member States of the European Union and the OECD (Loretz, 2008: 645 et seq.).

Yet, the corporate income tax rate does not give the whole picture as the reduction of corporate income tax rates in many longstanding EU and OECD Member States has in many cases been accompanied by a broadening of the tax base. This trend, however, has been to some extend counteracted by temporary measures taken in response to the global economic crisis, first and foremost the increase of depreciation rates or the introduction of declining balance depreciation (Spengel & Zinn, 2011: 505 et seq.).

With respect to accession countries, the picture is not so clear. Whereas many new Member States provide for special investment incentives and generous depreciation allowances and therefore tend to have smaller tax bases (Devereux, 2007: 17), provisions for inter-temporal loss offset are in many cases stricter than among the group of EU-15 countries (Jacobs et al., 2011: 76).

Effective tax burdens take into account the most important features of a tax system beyond statutory tax rates. They serve as an indicator for how taxes may affect investors' decisions on location, scale and mode of finance of a potential investment. Moreover, they provide policy makers with simplified but sophisticated information about the impact of their tax policy decisions on economic activity, especially in an international context.

When policymakers want to evaluate the impact of their tax policy on economic activity, it is of particular importance to understand how tax systems have developed over time. Therefore, the objective of this paper is to investigate the development of corporate tax law in Romania from 1992 to 2010 in order to highlight the main structural changes of the Romanian tax system. To our knowledge, all research on the development of taxation in Romania since the fall of the communist regime either focuses on the macroeconomic perspective, giving insights how tax revenue as a percentage of GDP has evolved over time, or, more recently, on the impact of flat tax but does not point out the important structural changes in detail (Devereux, 2007; Dobrotă & Chirculescu, 2009; Drăcea, 2008; Voinea & Mihăescu, 2009; Mutaşcu & Dănulețiu, 2011).

Our analysis is not limited to a comprehensive description of the development of corporate taxation in Romania, but goes on with a numerical analysis of the tax burdens at different pe-

riods of time which constitute milestones in the development of corporate taxation in Romania. Moreover, we compare the Romanian corporate tax burden in the year 2010 with the tax burden in the other 6 Central and Eastern European Member States of the European Union. This allows us to point out to what extent the attractiveness of Romania as a location for investment has been increased from the perspective of taxation and where Romania stands today among the Member States of the European Union.

The calculations are based on the methodology of the European Tax Analyzer. This approach allows to separately account for any kind of non-profit tax as well as complicated tax provisions, such as different kinds of rules that limit the deduction of interest expenses or provisions governing inter-temporal loss-offset, in great detail and hence provides valuable insights in the different tax drivers. The European Tax Analyzer has been used in a wide variety of international tax burden comparisons. Furthermore, it has been approved by the European Commission in several studies (European Commission, 2001; European Commission, 2011; Spengel & Oestreicher, 2011). Moreover, the model has already been applied to analyse the development of corporate taxation over time for the case of Germany and other EU Member States (Spengel & Zinn, 2011). This paper, however, provides the first application of the European Tax Analyzer in an analysis of the development over time of a transition economy's tax system, namely Romania.

The remainder of this article is structured as follows: in chapter 2, we present a comprehensive description of the development of corporate tax law in Romania from 1992 to 2010. We furthermore confront the current tax system with corporate taxation among the other accession countries. In chapter 3, we introduce the methodology for the computation of effective company tax burdens as well as the underlying database. In chapter 4, the effective tax burdens for the six considered years are analysed in detail. As corporate income taxes might affect investment in various industry sectors differently, the comparison of the effective tax burdens is finally extended to corporations representing different industries. Chapter 4 concludes with a comparison of the company tax burden of the Central and Eastern European EU accession countries and an assessment of possible measures to reform corporate taxation in Romania. We finally summarise our findings in chapter 5.

2. Corporate Taxation in Romania from 1992 to 2010

Among the Member States of the European Union, Romania is considered to be a low tax country. This is mainly due to the adoption of the flat tax system in 2005, which involves a uniform tax rate for corporate income tax and personal income tax amounting to 16%. This is in line with a common trend among Eastern and Central European countries towards the introduction of flat tax systems (Ellis, 2010; Keen et al., 2008: 716). Besides this, many other Member States of the European Union and the OECD have significantly reduced their corporate income tax rates as well (OECD tax database; Devereux, 2008: 630; Devereux et al.,

2009). Yet, the corporate income tax rate in Romania still significantly undercuts the average corporate income tax rate in the European Union, which amount to approximately 22% in 2010 (Taxes in Europe database; IBFD database).

In many EU Member States, the reduction of the corporate income tax rate was accompanied by a broadening of the income tax base (Devereux et al., 2002: 457 et seq.; Loretz, 2008: 645 et seq.; Spengel & Zinn, 2011). This involves, inter alia, the limitation of depreciation for tax purposes, the introduction of thin-capitalisation rules, which limit the deduction of interest expenses, and the restriction of inter-temporal loss offset.

In this section, we summarise the major developments of corporate taxation in Romania from 1992 until 2010. In doing so, we take into account major tax provisions for the determination of taxable profits, namely depreciation allowances, production costs as well as inventory valuation, pension costs, rules restricting the deductibility of interest, the taxation of dividend income, and the treatment of losses. In addition to corporate income tax, real estate taxes are considered. No other profit or non-profit taxes are levied in Romania. As the focus is on the taxation of corporation, the taxation of individuals is not taken into account.

2.1. Corporate income tax

Table 1 gives an overview of the most important tax provisions which are discussed in more detail in the following. The focus is on the years 1992, 1995, 1998, 2003, 2006 and 2010[1] as these years constitute important milestones in the development of corporate taxation in Romania.

2.1.1. Statutory corporate income tax rate

The corporate income tax rate has declined significantly over the last twenty years from 45% in 1992 to 16% from the year 2005 on (see table 1). From 1992 to 1994, a tax scale with only two brackets was in place which involved that income up to ROL 1 Mio. (RON 10,000) was subject to a tax rate of 30%.

From 1st May, 2009 until 30th September, 2010, an alternative minimum tax (AMT) was in place. The alternative minimum tax was determined based on the taxpayer's turnover, amounting to a maximum payment of RON 43,000 if the turnover exceeded RON 129 Mio. Table A-1 in the appendix shows the overall AMT tax scale.

[1] The only significant tax law change concerning corporate taxation in 2011 compared to 2010 is the abolition of the AMT.

Table 1: Most important rules for the determination of the corporate income tax in the years under consideration in Romania

Year	1992	1995	1998	2003	2006	2010
Corporate Income Tax						
CIT Rate (%)	30/45	38	38	25	16	16
AMT	--	--	--	--	--	In force
Corporate Income Tax Base						
Depreciation						
Land	--	25% of short-term lending rate	--	--	--	--
Office buildings						
Method	SL	SL	SL	SL	SL	SL
Useful life	36 years	2%	50 years	50 years	**40**-60 years	**40**-60 years
Factory buildings						
Method	SL	SL	SL	SL	SL	SL
Useful life/ rate	36 years	2%	50 years	50 years	**40**-60 years	**40**-60years
Office equipment						
Method	SL	PD	**AD**, DB,SL	**AD**, DB, SL	**DB**, SL	**DB**, SL
Useful life/ rate	∅ 11 years	(ul)	∅ 14 years	15 years	**9**-15 years	**9**-15 years
Factory equipment						
Method	SL	PD	**AD**, DB,SL	**AD**, DB,SL	**AD**, DB,SL	**AD**, DB,SL
Useful life/ rate	(7 years)	(ul)	∅ 9 years	∅ 9 years	∅ 7-11 years	∅ 7-11 years
Machinery						
Method	SL	PD	**AD**, DB,SL	**AD**, DB,SL	**AD**, DB,SL	**AD**, DB,SL
Useful life/ rate	(7 years)	(ul)	∅ 9 years	∅ 9 years	∅ 7-11 years	∅ 7-11 years
Patents						
Method	SL	SL	**AD**, DB,SL	**AD**, DB, SL	**AD**, DB, SL	**AD**, DB, SL
Useful life	5 years	5 years	5 years	5 years	5 years	5 years
Licenses						
Method	SL	SL	SL	SL	SL	SL
Useful life	5 years	5 years	5 years	5 years	5 years	5 years
Valuation of inventories	WAC	**LIFO**, WAC, FIFO	**LIFO**, WAC, FIFO	**LIFO**, WAC, FIFO	**LIFO**, WAC, FIFO	**LIFO**, WAC, FIFO
Production costs	Full cost	Full cost	Full cost	Full cost	Full cost	Full cost
Pension costs	--	--	--	--	Pension fund, up to EUR 200 per employee	Pension fund, up to EUR 400 per employee
Treatment of interest expenses	Fully deductible	Deductible up to interest income plus 20% of other revenue	Fully deductible	Fully deductible if D/E < 1 Additionally deductible up to interest income plus 10% of other revenue	Fully deductible if D/E < 3 Only applies to shareholder loans	Fully deductible if D/E < 3 Only applies to shareholder loans
Deductible taxes	Real estate taxes	Real estate taxes	Real estate taxes	Real estate taxes	Real estate taxes	Real estate taxes
Dividend income						
Domestic	Taxable	Exemption	Exemption	Exemption	Exemption	Exemption
Foreign	Taxable	Taxable	Taxable	Taxable	Taxable	Exemption
Loss treatment						
Carry-forward	2 years	5 years	5 years	5 years	5 years	7 years
Carry-back	--	--	--	--	--	--

SL: straight line; **DB:** declining balance; **AD:** accelerated depreciation; **ul:** useful life; **n/a:** not applicable; **LIFO**: last-in-first out method; **WAC**: weighted average cost method

2.1.2. Corporate income tax base

Depreciation allowances

For fiscal purposes, depreciation allowances are granted with respect to the capital expenditure incurred by a taxpayer on assets used in its business. Such assets include buildings, plant, machinery, equipment and intangibles like patents, trademarks or licenses. In contrast to this, land is not depreciable. In 2010, several different depreciation methods are available, namely the straight-line depreciation method (SL), the declining-balance depreciation method (DB) and accelerated depreciation method (AD).

If the straight-line method is applied, the depreciation allowances are determined by evenly allocating the acquisition or production costs to the useful live for tax purposes. The declining-balance method entails the application of a coefficient of 1.5 (useful life for fiscal purposes of 2 to 4 years), 2 (5 to 10 years) or 2.5 (more than 10 years) to the straight-line depreciation allowance. A switch-over to the straight-line method is permitted as soon as the straight-line depreciation, which takes into account the remaining useful life, results in a higher depreciation allowance than the declining-balance depreciation. Hence, the declining-balance method is the more favourable depreciation method from the perspective of the tax payer. Yet, it is only available for movable, tangible assets, which exclude intangible assets and buildings. The accelerated depreciation method involves a deduction of 50% of the entry value in the first year of use. Subsequently, the residual value has to be depreciated according to the straight-line method over the remaining useful life. In 2010, the accelerated depreciation method was only available with respect to machinery, factory equipment and patents, but not for buildings, office equipment and licenses.

The maximum and minimum useful life for tax purposes for machinery, factory equipment and office equipment is specified by law (see table A-2 in the appendix). The permissible range varies substantially with respect to the specific kind of machinery or equipment as well as the sector. If the sectors manufacturing, commerce, construction, transport and service are considered jointly, machinery and factory equipment may be depreciated over 7 to 11 years on average. In the case of office equipment, the permissible useful life ranges from 9 to 15 years regardless of the sector (see table 1). The taxpayer may choose any depreciation period among the permissible range, even if this results in a lower depreciation period than according to the economic life of the respective asset.

During the period under consideration (1992 – 2010), the provisions concerning the depreciation allowances have changed several times. This concerns the available depreciation methods as well as the useful life for tax purposes. Moreover, depreciation for land has been available for a short period of time from 1994 until 1996 and amounted to 25% of the short term lending interest rate (see table 1).

The official tables specifying the useful lives for tax purposes, which are in place since 2004, provide a range of permissible useful lives with respect to machinery and factory equipment. This allows for a certain amount of discretion of the taxpayer. Until 2004, the useful lives for different kinds of assets were fixed to a specific value instead of a range of permissible useful lives to choose from (see table A-2 in the appendix). From 1992 to 1993, the average useful life according to the official tables was 11 years for machinery and factory equipment and 19 years for office equipment (if the sectors manufacturing, commerce, construction, transport and service are considered jointly) (for reference see table A-2 in the appendix). When determining depreciation allowances, the useful life was further reduced by 40%. Consequentially, machinery and factory equipment were depreciated over a period of 7 years (equalling a depreciation rate of 14.29%) on average whereas office equipment was depreciated over 11 years (equals a depreciation rate of 9.09%) on average. The 40% reduction also applied to buildings, resulting in a depreciation period of 36 years.

In 1994, the useful lives were decreased, on average, to 9 years for machinery and factory equipment, 14 years for office equipment and 50 years for buildings. Yet, the 40% reduction was abolished, which resulted in longer depreciation periods than in the preceding years. In contrast to this, the introduction of the official tables in place since 2005 resulted in lower depreciation periods (see table 1).

The applicable depreciation methods have undergone several changes since 1992 as well. From 1992 to 1994, only the straight-line method was available. With respect to movable assets, straight-line depreciation was replaced by pool-depreciation (PD) in 1995. Under the pool depreciation method, assets with similar useful lives were pooled together and depreciated at a fixed rate. The assets were allocated to the different asset pools based on their expected useful life (see table A-3 in the appendix).

In 1998, the main features of the system in place today, namely straight-line, declining-balance and accelerated depreciation (50% depreciation in the first period of use), were finally introduced. In contrast to the regime in place in 2010, accelerated depreciation had also been available for office equipment until 2003.

Although the provisions governing depreciation for tax purposes have not evolved in a straight-forward manner as some tax law changes worked in the detriment whereas others worked in favour of the tax payers, the overall picture shows that depreciation allowances have been increased since 1992.

Production costs and Inventory Valuation

Under Romanian tax law, the determination of production costs generally follows a full cost approach. Consequentially, all direct costs, material and production overhead costs, and the depreciation of fixed assets which are related to production have to be included. Interest costs may only be capitalised if they are related to long term contracts. General administration costs

are not included. Development costs are capitalised when the conditions to recognise an intangible asset are fulfilled according to local GAAP, while research costs are expensed immediately. Finally, distribution and sales costs are not included in production costs.

As for the valuation of inventory, the last-in-first-out method (LIFO), the first-in-first-out method (FIFO) and the average cost method (WAC) are available. In the case of inflation, the LIFO method results in the lowest taxable profit. Before these valuation methods were introduced to Romanian tax law in 1994, the valuation of inventories was not governed by law. The application of the average cost method was, however, usually approved by the tax authorities.

Pension Costs

The deductibility of pension costs generally depends on the manner in which the occupational pension scheme is financed. In this respect, it is possible to distinguish between funded and unfunded schemes. In contrast to this, public pension schemes financed through social security contributions are not considered here. In the case of funded schemes, companies make regular cash contributions to a pension fund, which collects the money and is responsible for the future pension payments to the employees. By contrast, in an unfunded scheme, the company takes such responsibility and a provision is set up. In both cases, the costs for the future pension payments are deductible from the tax base upon realisation. As unfunded schemes are not common in Romania, Romanian tax law does not provide for the recognition of pension provisions. Since 1st July, 2005, companies may, however, deduct contributions to a pension fund. Yet, Romanian tax law limits the deductible pension contributions to EUR 400 per employee and per year since 2009 (EUR 200 from 2005 to 2008). In addition, the deductible pension costs may not exceed 15% of the employee's gross salary. Hence, pension costs are only of limited importance for corporate taxation and are not considered in chapter 4.

Restrictions to the deduction of interest expenses

Interest expenses which are related to business are generally deductible. Yet, Romanian tax law provides for two kinds of provisions restricting the deduction of interest which does not satisfy certain arm's-length-requirements. Both rules are in place since 1st July, 2002.

First, interest expenses relating to loans by related parties and non-financial institutions exceeding 6% (for loans denominated in hard currency) or the National Bank of Romania's reference interest rate (6.25%) (for loans denominated in RON) are not deductible. These interest rates are subject to change on a yearly basis. Interest which may not be deducted according to this rule must not be carried forward. Second, interest relating to medium and long term shareholder loans is not deductible if a debt-to-equity ratio of 3:1 is exceeded (interest-stripping rule). For the purpose of this comparison, the amount of equity and debt are calculated at an average of the balances as at 1st January and 31st December of the respective year. The scope of equity comprises the share capital and the profit reserves, while only share-

holder loans are taken into account when determining the debt-to-equity ratio. Interest which is non-deductible under this provision may be fully deducted in future periods as soon as the debt-to-equity ratio falls below 3:1.

The tax provisions that restrict the deduction of interest expenses have undergone several important changes since 1992. First, when the thin-capitalisation rules were introduced on 1st July, 2002, the debt-to-equity-ratio was originally 1:1. In 2004, the debt-to-equity ratio was increased to 3:1. Second, the earning-stripping provision originally covered loans by banks in addition to shareholder loan. Interest on loans from banks was excluded from the scope of the earning-stripping rule in 2005. Hence, the provision in place in 2010 is much less restrictive than the original provision introduced on 1st July, 2002. Third, from 2002 to 2004, the earning-stripping rule was accompanied by another provision. Under this rule, interest expenses were deductible up to interest income plus 10% of revenue,[2] even if the earning-stripping rule applied.

Finally, two other provisions restricting the deduction of interest expenses had been in place before the rules in place since 2002 were introduced. In the years 1995 and 1996, interest was only deductible up to the amount of interest income plus 20% of revenue. Interest which was not deductible in a certain year could be deducted in the following years, taking into account the inflation rate. In contrast to this, from 2000 until 30th June, 2002, interest expenses were generally deductible up to the interest rate applicable to loans by commercial banks. Hence, interest on loans meeting arm's length requirements was fully deductible. In contrast to this, the provision in place in 2010 does not offer a safe haven with respect to interest from shareholder loans meeting arm's length requirements.

Deductible taxes

The two real estate taxes levied in Romania, namely the building tax and the land tax, have been deductible from the corporate income tax base during the whole period under consideration (1992-2010).

Taxation of dividend income

Since 1995, domestic dividend income has been exempt from corporate income tax. With regard to foreign dividend income, the provisions of the EU Parent-Subsidiary Directive[3] were implemented in domestic law in 2007. Hence, dividends received by a Romanian company (or permanent establishment) from a company resident in an EU Member State which is subject to corporate income tax in the country of residence are exempt from corporate income tax in Romania if the recipient company has continuously held at least 10% of the share capi-

[2] For the purpose of this provision, revenue excluded interest income, foreign exchange gains, revenue associated with the costs of the completed production, capitalised costs of intangible non-current assets and capitalised costs of tangible non-current assets.

[3] Council Directive 90/435/EEC of 23rd July, 1990 and Council Directive 2003/123/EC of 22nd December, 2003 amending Directive 90/435/EEC.

tal of the distributing company for a minimum period of 2 years at the date of the dividend payment. In all other cases, dividends are included in the taxable profits and subject to corporate tax rate. Yet, unilateral relief for juridical double taxation is provided by way of an ordinary tax credit for income taxes paid abroad. The tax credit, however, is restricted to the corporate income tax computed according to the Romanian tax provisions.

Before the implementation of the EU Parent-Subsidiary Directive in 2007, foreign dividends were included in the tax base of corporate income tax and no relief for economic double taxation was granted. A tax credit was, however, available for foreign withholding tax. This credit was limited to the Romanian corporate income tax due on the foreign dividends. In contrast to this, domestic dividends have been exempt from the corporate income tax base since 1995. Yet, since 1992, dividends distributed to resident parent companies have been subject to withholding tax at a rate of 10% (16% since 1st July, 2010). In connection with the implementation of the Parent-Subsidiary Directive, the withholding tax rate was abolished in 2007 for cases where the conditions highlighted above are fulfilled.

Tax treatment of losses

In 2010, losses may be carried-forward for 7 years. Since 1992, the period for low carry-forward has been increased as presented in table 1. Besides the time limit, loss carry-forward is not limited in absolute or relative terms. A loss carry back is not available.

2.1.3. Tax incentives

During the period under consideration, a great variety of tax incentives have been available at different points of time. In the following, we refer to the most relevant ones. From 1992 until 1994, Romanian tax law offered a tax holiday ranging from 6 months up to five years depending on the sector.[4] In addition, from 1992 to 1998, from 2001 to 2002 and again from 2009 to 2010, reinvested profits were fully or partially tax exempt if certain conditions were fulfilled. Finally, in 2009, a tax incentive for research and development was introduced providing for a deduction of 120% of eligible R&D expenses when determining the corporate income tax base.

2.2. Real estate taxes

Corporations resident in Romania are subject to two major real estate taxes, namely building tax and land tax. For the year 2010, the tax rate of land tax varies between RON 153 and RON 8,921 per 10,000 sqm, depending on the type of the locality and the zone where the land is situated within the locality, which again depends on the category of use. In the case of highly-developed industrial sites, the rate for zone C generally applies which ranges from

[4] The following tax holidays were granted from 1992 to 1994: 5 years for companies belonging to the sectors energy, construction and manufacturing, 3 years for transport companies and half a year for companies belonging to the sector commerce.

RON 306 to RON 5,600 per 10,000 sqm depending on the size of the locality. Furthermore, local authorities may increase the applicable tax rate by up to 20%.

Table 2 depicts the tax base and tax rate of the building tax and the land tax for the years under consideration. Land tax is determined by multiplying the area of land by the tax rate, which depends on the type of the locality and the zone where the land is situated within the locality. Only unbuilt land, meaning land with no building on top, is currently subject to land tax. In contrast to this, from 1995 to 1998, the tax base of land tax comprised built-up land as well as unbuilt land.

Table 2: Development of real estate taxes in Romania from 1992 to 2010

Year	1992	1995	1998	2003	2006	2010
Real estate taxes						
Building tax						
tax base	Historical cost	Historical cost	Historical cost	Historical cost	Historical cost	Historical cost
tax rate[5]	1.5%	1.33%	1%-1.5%	0.5% -1.5% (3%-5%)	0.5%-1% (5%-10%)	0.25%-1.5% (5%-10%)
Land tax						
tax base	unbuilt land (sqm)	all land (sqm)	all land (sqm)	unbuilt land (sqm)	unbuilt land (sqm)	unbuilt land (sqm)
tax rate (RON[6] per 10,000 sqm, zone C) arithmetic mean	0.45	38	113	1,633	2,060	2,482

Building tax is levied by multiplying the historical value of real property except land by a tax rate which is set by the Local Council and varies between 0.25% and 1.5%. If the buildings have been fully depreciated for tax purposes, the tax base may be decreased by 15%. If the building has not been revaluated in the last three years, the tax rate is increased by the Local Council, resulting in tax rates varying between 5% and 10%.

In the last 20 years, the tax rates for land tax have been increased significantly. In the case of land used for industrial purposes, the arithmetic mean of the tax rates has been increased from RON[7] 0.45 per 10,000 sqm in 1992 to RON 2,482 (zone C) in 2010.[8] In comparison, the building tax rate has undergone only small changes as shown in table 2.

2.3. Corporate taxation among the accession countries

From the perspective of Romanian tax policy makers, the other Central and Eastern European Member States of the EU constitute an important reference group. These countries are Bulgaria, the Czech Republic, Hungary, Poland, the Slovak Republic and Slovenia. Hence, in the following, we will give a brief overview of the most important aspects of corporate taxation in

5 The tax rates in brackets apply if the building has not been revalued in the past 3 years.

6 The rates applicable in 1992, 1995 and 1998 are converted from ROL into RON, which is the currency in place since 2003, at the official conversion rate of ROL/RON 10,000/1.

7 Converted from ROL into RON at the official conversion rate of ROL/RON 10,000/1.

8 See Table A-4 in the Appendix.

these countries and highlight differences as well as similarities with respect to the Romanian tax system. Table 3 gives an overview of the most important features of the corporate tax systems.

Among the seven considered countries, only Bulgaria undercuts the Romanian statutory corporate income tax by 6 percentage points. In Hungary, a local income tax is levied in addition to the corporate income tax. Moreover, the rules governing depreciation allowances in Romania stand out among the group of Central and Eastern European EU Member States in two ways. First, machinery and factory equipment as well as patents may be depreciated at a rate of 50% of the acquisition or production costs in the first period of use followed by the straight-line depreciation over the remaining useful life for tax purposes (accelerated depreciation). Second, the useful life stipulated by tax law is higher than in the other six Central and Eastern European EU Member States.

All of the seven Central and Eastern European countries except the Slovak Republic apply thin-capitalisation rules that restrict the deduction of interest if a certain debt-to equity ratio is exceeded. With a debt-to equity ratio of 3:1, the Romanian rules do not differ from the practice among the other countries under consideration. Only Slovenia applies a more generous debt-to-equity ratio of 6:1 (see table 3).

Like the majority of the countries under consideration, Romania allows for the application of the LIFO-method for the valuation of inventory, which is more tax favourable from the taxpayer perspective in the case of increasing prices. Finally, the treatment of losses within the scope of the Romanian corporate tax system is neither especially strict nor especially generous compared to the other six Central and Eastern European countries.

Summing up, this review of several important features of the corporate tax system shows that the Romanian corporate tax system does not significantly differ from the tax systems in place in the other six Central and Eastern European accession countries.

Table 3: Most important rules for the determination of the corporate income tax in the Central- and Eastern European Member States of the EU (2009)

	Bulgaria	Czech Republic	Hungary	Poland	Romania (2010)	Slovak Republic	Slovenia
Corporate Income Tax							
Tax Rate							
Corporate Income Tax Rate	10%	19%	10%/19%[9]	19%	16%	19%	20%
Local Taxes on Income	-	-	2.3%	-	-	-	-
Surcharge	-	-	-	-	-	-	-
Tax Base							
Depreciation							
Patent/Licenses (years/rate)	SL (ul)	SL (ul)	SL (2)	SL (ul)	SL (5)	SL (ul)	SL (10)
Buildings (years/rate)	SL (25)	AD (30-50)	SL (50)	SL (40)	SL (40-60)	AD (20)	SL (33.3)
Machinery and Equipment (years/rate)	SL (3.33)	AD (3-5)	SL (2)	SL (ul) or double DB	AD (∅ 7-11)	AD (6)	SL (5)
Treatment of Inventory	LIFO	WAC	LIFO	LIFO	LIFO	WAC	WAC
Thin-Capitalization Rules[10]	yes	yes	yes	yes	yes	no specific rules	yes
Applicable to loans by financial institutions[11]	no	no	no	no	no	n/a	no
Debt/Equity ratio	3:1	4:1	3:1	3:1	3:1	n/a	6:1
Arm's length exemption	no	no	-	-	-	n/a	yes
Carry Forward	5 years	no	-	-	yes	n/a	-
Deductible Taxes	Real Estate Tax	Real Estate Tax	Real Estate Tax, Local Business Tax	Real Estate Tax	Real Estate Tax	Real Estate Tax	n/a
Loss Relief							
Forward (max. amount)	5 years	5 years	unlimited	5 years (50%)	7 years	7 years	unlimited
Backward (max. amount)	-	-	-	-	-	-	-
Other taxes	Real Estate Tax	Real Estate Tax	Real Estate Tax, Local Business Tax	Real Estate Tax	Real Estate Tax	Real Estate Tax	-
Tax Base RET	Book-/ Assessed value of land and buildings	Build-up area/ area of unbuilt land	Build-up area/ area of unbuilt land	Build-up area/ land	Acquisition cost/ area of unbuilt land	Build-up area/ assessed value land	-
Tax Rate RET	0.01-0.25%	CZK 2-10/ sqm (land); CZK 10-50/ sqm (buildings);	HUF 200/sqm (land); HUF 900/sqm (buildings	PLN 20.51/sqm (buildings)/ PLN 0.77/sqm (land)	0.25%-1.5% (buildings)/ RON ∅ 0.25/sqm (land)	Min. EUR 0.033 /sqm (buildings)/ 0.25% (land)	-

SL: straight line; **DB:** declining balance; **AD:** accelerated depreciation; **ul:** useful life; **n/a:** not applicable; **LIFO**: last-in-first out method; **WAC**: weighted average cost method

[9] Since 1st July 2010, income up to HUF 250 Mio. is subject to a reduced rate of 10% without being subject to further conditions. Income exceeding this amount is subject to a rate of 19%.

[10] For a more detailed overview of thin-capitalisation rules in Europe, also see Dourado & de la Feria, 2008.

[11] This does not comprise back-to-back financing via a financial institution.

2.4. Interim results

Our survey of the development of corporate tax law from 1992 to 2010 conveys that corporate taxation in Romania has undergone many significant changes in the past twenty years. Whereas the steady and significant decrease of the corporate income tax rate constitutes an example for a continuous development of the tax system, several other areas of corporate taxation are not characterised by continuity. This especially holds true with respect to depreciation allowances and provisions that limit the deductibility of interest expenses.

When assessing Romania's attractiveness as a location for investment with regard to corporate taxation, the decrease of the corporate income tax rate constitutes the most important development. Moreover, we can summarise that the sharp decrease of the corporate income tax rate has been accompanied by a narrowing of the corporate income tax base. First, depreciation allowances have been increased. Second, domestic and foreign dividends have been excluded from the tax base. Third, the time span for loss carry-forward has been widened. With respect to provisions that restrict the deductibility of interest, the impression is less straightforward because the scope of the earning-stripping rule in place since 2002 is more restrictive than the preceding provisions, but has been relaxed to some extent in 2005 through the exclusion of interest on loans from financial institutions as well as on corporate bonds and the increase of the debt-to-equity ratio from 1:1 to 3:1.

Hence, the development of corporate taxation in Romania contrasts the trend of tax-rate-cut-cum-base-broadening, which can be detected for many other Member States of the European Union as well as OECD Member States (Devereux et al., 2002: 457 et seq.; Finke et al., 2010; Loretz, 2008: 645 et seq.).

The comparison of the main features of the Romanian tax system with the tax systems of the six other Central and Eastern European EU accession countries highlights that Romania stands out positively with respect to the corporate tax rate and generally is in line with the tax policy of the other countries under consideration with respect to all other accentuated tax provisions.

3. Methodology and Data

The effective corporate tax burden is determined by a applying the European Tax Analyzer (see European Commission, 2011; Spengel & Oestreicher, 2011; Jacobs & Spengel, 2002; European Commission, 2001; Jacobs & Spengel, 1996). The European Tax Analyzer is a computer-based model firm approach which calculates and compares effective average tax burdens for companies facing different tax systems in Europe. The effective average tax burden is derived by simulating the development of a company over the simulation period of ten years. It is expressed as the difference between the pre-tax and post-tax value of the company at the end of the simulation period and states the central outcome variable of the model. The value of the company is represented by its equity, including the capital stock and the cumula-

tive net income generated in each of the ten periods. In order to determine the post-tax value, the tax liabilities of each of the ten periods are derived by taking into account all taxes that may be influenced by investment and financing at the corporate level. Consideration is not only given to corporate income taxes, but also to local (profit) taxes, real estate taxes, wealth taxes and surcharges if applicable (for details see Spengel & Oestreicher, 2011: 3-7).

Depending on the tax rules which are to be applied, the tax value of assets and liabilities may differ from their fair value at the end of period ten. These unrealised profits and liabilities, which are calculated as the difference between the book-value of the assets and its replacement cost (for details see Gutekunst, 2005: 98 et seq.), are added to the taxable income in period ten and are taxed accordingly. Therefore, only the effects of different tax accounting rules on liquidity are taken into account. In order to fully capture the effects of different loss relief and thin-capitalisation rules, remaining loss-carry forwards or interest-carry forwards are liquidated at the end of the simulation period. With respect to the loss-carry forward, a devaluation of 90% of its nominal value is applied if the loss-carry forward is limited to one year. In line with this, no devaluation is applied if losses can be carried forward 10 years and more.[12] In the case of an interest carry-forward, the devaluation amounts to 50% if the tax law does not provide any restrictions for the use of the interest carry-forward. In turn, a devaluation of 75% is applied if there are restrictions.

Within this conceptual framework, the model uses empirical data mainly taken from the AMADEUS database to determine an EU-27 average company.[13] The implemented EU-27 average company thus represents a model of a firm ignoring country and industry specific effects on pre-tax data, which means that the balance sheet, the profit and loss account and the corporate planning of this model company are given and independent from country-specific taxation rules. For the sake of comparability, it is assumed that this model-firm shows identical financial ratios before any taxation in each considered country. As a consequence, differences between the pre-tax and post-tax data can be solely attributed to differing tax rules in the EU-Member States.

Table 4 and table 5 set out the balance sheet of the generated EU-27 average company and its most important financial ratios. It depicts the different types of investment and their sources of finance and highlights the relative weight of these investments and the source of finance.

12 A devaluation of 80% in the case of a 2-year loss carry-forward, a devaluation of 50% in the case of a 5-year loss carry-forward and a 30% devaluation in the case of a 7-year loss carry-forward follows from this.

13 The AMADEUS database (Bureau van Dijk Electronic Publishing (http://www.bvdep.com/de/AMADEUS.html)) provides financial and supplementary information for about 6.74 million companies in the European Union (Update 125 as of February 2005). For the purpose of this paper, data of 19,211 companies referring to financial data for the year 2001 are used to determine the large EU-27 average company. All other companies are not relevant in terms of size, legal forms (e.g. partnerships), industries (e.g. mining) or ownership (e.g. publicly owned). The main reason to choose the year 2001 was that, according to the Ifo Economic Climate Indicator for the Euro Area, this year approximates the long-term average and, thus, represents balanced economic conditions. For details, see Spengel & Oestreicher, 2011: 15 et seq.

Table 4: Tax balance sheet for the implemented EU-27 model firm (period six of ten)

ASSETS	EUR	EQUITY AND LIABILITIES	EUR
A. Fixed Assets		A. Equity	
I. Intangible Assets	2,875,872	I. Subscribed capital	18,207,742
II. Tangible Assets		II. Revenue reserves	21,082,256
1. Land and buildings	16,129,763	III. Net profit/Net loss	4,124,827
2. Technical equipment and machinery	15,870,976	B. Provisions	
3. Factory and office equipment	5,792,704	I. Provisions for pensions and similar obligations	
III. Financial Assets		II. Other provisions	6,185,594
1. Participating interests	8,075,041		
2. Long-term receivables	897,227	C. Creditors	
		I. Long-term bank loans	21,248,099
B. Current Assets		II. Amounts owed to shareholders	21,248,099
I. Stocks	22,936,037	III. Trade creditors	10,070,619
II. Trade debtors	15,945,781	IV. Short-term bank loans and overdrafts	24,266,515
III. Securities			
IV. Cash, bank balances	37,910,647		
TOTAL	**126,434,049**	**TOTAL**	**126,434,049**

The approach described for determining the EU-27 average company was applied identically in order to create industry-specific model firms. To this end, the data sample was divided by industry classes according to the Nomenclature statistique des activités économiques dans la Communauté européenne (NACE) code. The structure for these companies and their characteristics, expressed in common financial ratios, are presented in table 5.

Table 5: Financial ratios for the implemented EU-27 model firm (period six of ten)

	Base Case	Energy	Commerce	Construction	Manufacturing	Transport
Net profit/Net loss for period (EUR)	4,124,827	14,038,918	4,100,087	2,589,102	5,087,719	991,788
Total assets (EUR)	126,434,049	507,777,252	106,491,860	92,198,048	158,673,640	161,494,787
Sales (EUR)	159,457,817	296,484,315	235,488,844	100,372,294	169,088,711	144,381,685
Share of tangible fixed assets (*capital intensity*)	29.89%	42.85%	22.37%	19.03%	33.66%	40.51%
Share of financial assets *(financial assets ratio)*	6.39%	0.39%	6.26%	5.89%	6.96%	6.54%
Return on sales (*profitability*)	2.59%	4.74%	1.74%	2.58%	3.01%	0.69%
Return on equity	9.50%	6.60%	13.75%	9.88%	8.07%	1.82%
Equity ratio	34.34%	41.87%	28.00%	28.44%	39.75%	33.79%
Inventories to capital	18.14%	5.10%	26.66%	18.11%	19.20%	4.14%

The procedure of the European Tax Analyzer computation requires various estimates in order to define and describe the model firm and the economic conditions which are assumed to prevail. For production and sales, acquisition of goods, staff expenditure, other receipts and expenses (e.g. expenses for R&D), investment, distribution, and cost of financing, we derive all required information from the EUROSTAT and the BACH-Database. Regarding the macroeconomic data, different inflation rates, credit and debit interest rates, exchanges rates[14] and cost of energy are considered. Finally, several important assumptions have to be made:

- Expected economic lifetime for assets: 50 years for both production buildings and office buildings; 5 years for patents and concessions; 4 years for plant and 5 to 10 years for machinery; 9 years for office furniture and fixtures; zero for both financial assets and stocks.
- Depreciable assets are assumed to be run down at the end of their expected economic life and replaced with new assets, based on the historical cost of the deposited assets adjusted for inflation. Thus, the initial capital stock remains at least constant.
- The goods produced are assumed to be either stocked or sold on the market in the period of production, so multi-period production is possible.
- Inflation rates: 2.2% of consumer price index, 4.8% of price index for basic material, 0.8% of price index for wages, and 2.3% of price index for investment goods;[15]
- Interest rates for creditors and debtors: 3% for short term credit, 3.9% for long term credit, 5.9% for short term debt, and 5.1% for long term debt.[16].

The tax module also permits the selection of several accounting options (tax electives) which enable a company to influence its taxable profits. In summary, the profit computation of our approach covers:

- depreciation (i.e. the methods and tax periods for all relevant assets, extraordinary depreciation);
- stock valuation (i.e. last-in, first-out (LIFO), first-in, first-out (FIFO), and weighted average cost method; inflation reserves; production costs);
- research and development costs (i.e. immediate expensed or capitalised);
- employee pension schemes (i.e. deductibility of pension cost, contributions to pension funds; book reserves);

[14] In order to convert the tax payments for the land tax which is determined in RON/ per sqm of land into Euro, one uniform exchange rate is taken as a basis for the calculation of the effective tax burden, namely the average exchange rate of the year 2001. For the purpose of the comparison of the company tax burden of the Central and Eastern European EU accession countries, the average exchange rates of the year 2010 are taken as a basis for the determination of the effective tax burden.

[15] See ECB, ECB and Eurostat calculations, (Frankfurt am Main, 2006).

[16] See ECB, MFI interest rate statistics, December 2006, (Frankfurt am Main, 2006); OECD, Financial indicators MEI, (Paris, 2006).

- provisions for bad debts and guarantee accruals;
- elimination and mitigation of double taxation on foreign-source income (i.e. exemption and foreign tax credit, deduction of foreign taxes);
- thin-capitalisation rules as well as earning stripping rules;
- notional interest deductions; and
- loss relief (carry back and forward).

Thus, the methodological framework allows for detailed determination of the corporate tax base, providing valuable insights on the impact of changes of the tax provisions that govern the corporate income tax base.

4. Results

4.1. Assessing Romanian corporate tax reforms during 1992-2010

As a starting point, table 6 displays the effective tax burdens of the base case and the share of particular tax categories in the overall tax burden at the corporate level in Romania over the time period between 1992 and 2010. The focus is on the years 1992, 1995, 1998, 2003, 2006 and 2010 as these years constitute important milestones in the development of corporate taxation in Romania. The results confirm the expected long-term downward trend of the effective tax burden. Overall, the company tax burden decreased by EUR 29,282,603 (equalling 182.89 % relating to the benchmark tax regime 2010) from EUR 45,293,505 under the tax code in effect in the year 1992 to EUR 16,010,902 at present (year 2010).[17] Yet, one has to keep in mind that companies could enjoy a consistent tax holiday up to 5 years, depending on the industry in which the company had operated before 1995. Taking this tax holiday into account, the overall effective tax burden for the tax regime as of 1992 decreases to EUR 25,034,407. Accordingly, the overall reduction in the effective tax burden amounts only to EUR 9,023,505 (equalling 56.36% relating to the benchmark tax regime 2010).

In addition, table 6 demonstrates that the corporate income tax generally constitutes the main share of the overall tax burden. Its share ranges from 97.58% in 1992 to 92.73% in 2010. Consequently, the impact of non-profit taxes, i.e. the building and land tax, on the overall tax burden is relatively low. The striking decline is, therefore, mainly attributed to the continuous tax rate cuts over the last decades starting from 45% in 1992 to a uniform and final rate of 16% in 2010. Besides declining corporate income tax rates, the elements that narrow the tax base support the decline in the effective tax burden. Most important, the exemption of foreign dividend income in 2010, the more generous depreciation allowances implemented over the time period under consideration, or the option to make use of the LIFO-method for corporate income tax purposes (1995) significantly reduces the effective tax burden. In addition, the

[17] As the abolition of the AMT is the only significant corporate tax law change in the year 2011, the effective tax burden determined for the year 2010 also applies to the year 2011 with respect to the base case.

elements of the corporate tax reforms which broadened the tax base mitigate the positive effect of the tax rate cuts on the effective tax burden only to a small extent. Mainly due to the comparatively high profitability and equity ratio, the base case model firm is neither subject to the AMT nor to the thin-capitalisation regulations.

Table 3: Effective tax burdens and impact of different tax categories on the effective tax burden (10 periods)

	Effective average tax burden (EUR)	Deviation from 2010 (%)	Impact of particular tax categories on the effective tax burden in %		
			Corporate Income Tax	Building Tax	Land Tax
Romania 1992 Tax Holiday 3 years	25,034,407	56.36	94.45	5.55	0.00
Romania 1992	45,293,505	182.89	97.58	2.42	0.00
Romania 1995	38,034,111	137.55	97.08	2.91	0.00
Romania 1998	36,434,760	127.56	97.14	2.86	0.00
Romania 2003	24,528,502	53.20	95.23	4.60	0.16
Romania 2006	16,105,833	0.59	93.82	5.83	0.35
Romania 2010	16,010,902		92.73	6.85	0.42

This becomes obvious when comparing the effective tax burden of the tax regimes as of 2006 and 2010. Despite the constant corporate income tax rate under both tax regimes, corporate income tax is levied at a rate of 16%, the overall effective tax burden decreases by EUR 94,931 (0.59%). While the higher tax rate for building tax purposes causes only a slight increase in the effective average tax burden, the exemption of foreign-source dividend payments (EU Parent-Subsidiary Directive) reduces the tax burden by EUR 263,086 (1.64%).

Similarly, the reduction of the effective tax burden from 1995 to 1998 amounting to EUR 1,599,351 (4.38%) is primarily caused by the availability of the accelerated depreciation scheme in 1998. Due to the immediate deduction of 50% of the initial acquisition costs of all machinery, factory equipment and patents, the effective tax burdens decreases by EUR 1,023,216 (2.81%) compared to a regular (straight-line) depreciation scheme. In contrast, the renunciation of depreciation of undeveloped land in 1996 increases the effective tax burden by EUR 12,440 (0.034%).

Finally, it is worth mentioning that the effective non-profit tax burden has been significantly increased over the time period under consideration. This is mainly due to the increasing tax rates for building and land tax. Besides the influence of increasing real estate tax rates, however, one has to remember that this effect is also a technical one. As the corporate income tax burden decreases over time, the same absolute real estate tax payments lead to a stronger relative tax burden.

4.2. Sensitivity Analysis

It has to be borne in mind that the results presented above are valid only for the model firm characterised by the specific set of financial ratios given in tables 4 and 5. As pointed out by David and Henrekson (2005), corporate income taxes might affect investment in various industry sectors differently. Therefore, the comparison of the effective average tax burdens is extended to corporations characterised by specific sets of financial ratios representing different industries. The industries considered are: energy, commerce, construction, manufacturing and transport. Furthermore, the sector analysis enables us to check the robustness of our results and examine the effects of altering model assumptions, thereby illustrating the sensitivity of the results to selected financial ratios.

Table 4: Effective tax burdens for different industries (10 periods)

	Base Case	**Energy**	**Commerce**	**Construction**	**Manufacturing**	**Transport**
Tax Holiday	**3 years**	**5 years**	**0.5 years**	**5 years**	**5 years**	**3 years**
Romania 1992 Tax Holiday	**25,034,407**	56,478,898	19,090,266	12,844,135	28,986,176	10,320,247
(Deviation from 2010)	*(56.36%)*	*(13.75%)*	*(24.06%)*	*(37.10%)*	*(35.58%)*	*(66.84%)*
Romania 1992	**45,293,505**	124,276,778	42,433,951	27,685,226	60,527,682	18,700,745
(Deviation from 2010)	*(182.89%)*	*(150.31%)*	*(175.75%)*	*(195.51%)*	*(183.12%)*	*(202.32%)*
Romania 1995	**38,034,111**	114,630,482	35,463,735	23,103,635	50,826,920	18,094,980
(Deviation from 2010)	*(137.55%)*	*(130.88%)*	*(130.46%)*	*(146.61%)*	*(137.74%)*	*(192.53%)*
Romania 1998	**36,434,760**	102,517,713	34,805,245	22,151,591	48,430,202	12,360,459
(Deviation from 2010)	*(127.56%)*	*(106.48%)*	*(126.18%)*	*(136.45%)*	*(126.53%)*	*(99.82%)*
Romania 2003	**24,528,502**	72,292,765	23,591,432	14,754,562	32,711,752	9,024,327
(Deviation from 2010)	*(53.20%)*	*(45.61%)*	*(53.31%)*	*(57.49%)*	*(53.01%)*	*(45.89%)*
Romania 2006*)*	**16,105,833**	48,501,689	15,475,461	9,486,265	21,494,561	6,104,800
(Deviation from 2010)	*(0.59%)*	*(-2.31%)*	*(0.57%)*	*(1.26%)*	*(0.54%)*	*(-1.31%)*
Romania 2010	**16,010,902**	49.649.659	15.388.299	9.368.595	21.379.068	6.185.721

Table 7 offers some insights into the characteristics of economic sectors which benefit to a higher or lower degree from the tax reforms over the last 20 years. At first glance, the results for the base case are confirmed by the industry-specific analysis. Irrespective of the industry, the findings reveal the general downward trend of the effective tax burden over the last two decades. This holds especially true for the model firms representing the commerce and manufacturing sector, which show similar financial ratios as the base case. Yet, the results of the average company representing the energy, construction and transport sector show significant changes in relative deviations between the implemented tax regimes.

Focusing on the energy sector, which is characterised by high levels of profits and high total immovable and movable fixed assets (capital intensity), the favourability of the tax regime as of 2010 and all other implemented tax regimes decrease in comparison to the base case. Indeed, corporations in the profitable energy sector benefit from tax rate cuts to a larger extent;

however, due to the high share of immovable assets in total assets, the increasing tax rates for building and land tax become more important. Furthermore, the financial assets ratio is considerably low in the energy sector. Consequently, corporations assessed under the tax regime as of 2010 benefit to a smaller extent from the exemption of foreign and domestic dividend income. For example, the exemption of foreign-source dividend payments in 2010 reduces the tax burden by only EUR 366,797 (0.74%) compared to EUR 263,086 (1.64%) in the base case.

By contrast, the relative deviations between the effective tax burdens of corporations assessed under the tax regime as of 2010 and all other implemented tax regimes becomes larger in the construction sector. As the corporation representing this business sector displays the lowest share of immovable fixed assets of all sectors under consideration, the effects identified for the energy sector revolve in the construction sector. In addition, due to the high share of fixed tangible assets in total assets, corporations benefit to a greater extent from the increased depreciation allowance over the time period under consideration, thereby explaining the comparatively high effective tax burdens under the tax regimes as of 1992 and 1995.

The average company of the transport sector yields lower profits and a higher capital intensity than the base case company. Again, non-profit taxes, e.g. real estate taxes, become more important in the overall tax burden and explain the lower tax burden of the tax regime as of 2006 compared to the one as of 2010. In addition, as the model company representing the transport sector suffers losses or very low income in several simulation periods, the introduction of the AMT increases the effective tax burden as of 2010 by EUR 69,811 (1.13%). By contrast, corporations benefit from the more generous loss carry-forward. While the incurred losses may completely offset the profits for corporations assessed under the tax regimes as of 1998, 2003, 2006 and 2010, the limitation of the loss carry-forward imposes restrictions on the liquidity and triggers additional tax burdens for corporations under the tax regimes as of 1992 and 1995. In detail, for both regimes, a large share of incurred losses cannot be offset against profits. *Ceteris paribus*, a loss carry-forward of 7 years would reduce the effective tax burden by EUR 921,179 (4.93%) and EUR 1,536,195 (8.49%) respectively.

4.3. International Comparison and Future Tax Reforms

Overall, the above analysis reveals the long-term downward trend of the tax burden and the increased attractiveness of Romania as an investment location form a tax point of view. Against the background of the ongoing tax competition in Europe, however, it is of great importance to analyse Romania's tax regime in an international context. In this regard, especially the other Central and Eastern European accession countries of the European Union, namely Bulgaria, the Czech Republic, Hungary, Poland, the Slovak Republic and Slovenia, must be considered as alternative investment locations. In the following, we thus expand our analysis to the countries mentioned above and analyse the effective tax burden in Romania in a cross-country setting. The international comparison is based on the tax regimes imple-

mented as of the fiscal year 2010 (see table 3). For the purpose of the international comparison, the average exchange rates of the year 2010 are taken as a basis for the determination of the effective tax burden which is stated in Euro.[18]

As the results displayed in table 8 show, there is a remarkable dispersion of effective tax burdens across Central and Eastern European EU accession countries. For the base case model firm, tax burdens range from EUR 9,943,237 in Bulgaria to EUR 40,608,921 in Hungary. Overall, the statutory tax rates and the effective tax burden are closely correlated, which is not surprising as the effective tax burden is calculated for a highly profitable model firm in the base case.

Table 5: Effective tax burdens of the Eastern European Member States and impact of particular tax categories on the effective tax burden (10 periods)

Country	Effective average tax burden (EUR)	Rank	Deviation from Romania (%)	Impact of particular tax categories on the effective tax burden in %		
				Profit taxes		Non-profit taxes
				Corporate Tax (incl. surcharge)	Trade/Local Tax on Income	Real Estate Tax
Bulgaria	9,961,865	1	-37.68	97.66	0.00	2.34
Czech Republic	18,654,528	3	16.70	98.64	0.00	1.36
Hungary	40,608,921	7	154.05	39.96	57.99	2.93
Poland	20,086,053	6	25.66	92.72	0.00	7.28
Romania (2010 exchange rate)	15,984,877	2	--	92.88	0.00	7.12
Slovak Republic	19,596,450	5	22.59	92.91	0.00	7.09
Slovenia	19,217,146	4	20.22	100.00	0.00	0.00
Central and Eastern European EU accession countries average	20,587,120					
EU-12 average	20,565,356					
EU-15 average	30,844,852					
EU-27 average	26,339,789					

The average tax burden of all eastern Member States amounts to EUR 20,565,356, which is considerably lower than the EU-27 average of EUR 26,339,789. In detail, while a comparably high tax burden can be identified in the 15 old EU Member States (EUR 30,844,852), the average tax burden in the 12 new Member States (EUR 20,565,356) is slightly lower than the average tax burden in the Central and Eastern European accession countries. Nevertheless, among all other Member States, only Ireland, Latvia and Cyprus provide for similar low tax burdens as Romania (Spengel & Zinn, 2011).

[18] As the value of the Romanian LEU has diminished in comparison to the Euro since 2001, applying the average exchange rates of the year 2010 results in a lower land tax burden and, consequentially, a lower overall effective tax burden than applying the average exchange rates of the year 2001; see fn. 14.

Focusing on the Central and Eastern European EU accession countries, the results displayed in table 8 reveal Romania's advantageous position in the international country ranking. Mainly due to its significantly lower statutory tax rate of 10% and the beneficial depreciation allowances for buildings and machinery (see table 3), only Bulgaria provides a significant lower tax burden of EUR 9,961,865. In contrast, Hungary clearly stands out from the other considered countries with an average tax burden of EUR 40,608,921, which is 154.05% higher than the tax burden in Romania. Here, the overall tax burden is substantially determined by the local business tax accounting for 57.99% of the overall tax burden.

In all other eastern Member States, the effective tax burden is between 16.70% (Czech Republic) and 25.66% (Poland) higher than the one in Romania. Besides the lower statutory tax rates, this is mainly due to the more generous depreciation schemes in Romania (see table 3). In contrast, due to the comparable high real estate tax burden, Romania cannot further improve its position in the country ranking. Although real estate taxes are levied in all countries under consideration except Slovenia, their share in the overall tax burden is, in general terms, lower than the one in Romania. This holds especially true for the Czech Republic and Bulgaria, which also explains the considerable low effective tax burden in both countries.

Table 6: Impact of corporate tax rate cuts on the effective tax burden (10 periods)

			Impact of particular tax categories on the effective tax burden in %		
	Effective average tax burden (EUR)	**Deviation from 2010 (%)**	**Corporate Income Tax**	**Building Tax**	**Land Tax**
Romania 2010 (2010 exchange rate)	15,984,877		92.88	6.86	0.26
Reform Options:					
CIT 14 %	14,139,571	-11.54	91.74	7.95	0.30
CIT 12%	12,286,010	-23.14	90.25	9.39	0.36
CIT 10%	10,424,163	-34.79	88.23	11.34	0.43
CIT 9.5%	9,957,398	-37,71	87.60	11.94	0.46

In the context of tax competition in the European Union, we finally analyse possible reform options for Romania by gradually decreasing the statutory corporate tax rate. Not surprisingly, the company tax burden decreases steadily with a reduction in the statutory corporate income tax rate. Assuming that all other jurisdictions do not amend their tax system, a corporate income tax rate of approximately 9.5% would not only place Romania ahead of Bulgaria but also on top of the overall European country ranking (table 9). Yet, even though the empirical literature provides clear results with regard to the positive impact of lower corporate taxes on foreign direct investment (Feld & Heckemeyer, 2011), it remains – especially against the background of the global economic crises and the increasing demand of public funding - at least questionable whether such a considerable tax rate cut is advisable. Instead of further increasing tax competition, we are likely to see some policy coordination and multilateral action

against tax distortions in Europe. In this regard, there are some promising signs, such as the Draft Council Directive on a Common Consolidated Corporate Tax Base (CCCTB) for Europe published by European Commission on 16th March, 2011 (European Commission, 2011). As the European Commission is currently in favour of tax competition based on national corporate tax rates under the proposed CCCTB[19], it would also leave Romania and other Member States large areas of tax autonomy and room to attract foreign investment.

5. Conclusions

This paper provides a detailed analysis of the development of the Romanian company tax system in the last 20 years since the fall of the communist regimes. The analysis is not limited to the development of the corporate income tax rates but also covers the most important provisions governing the determination of the corporate income tax base as well as other taxes. Furthermore, the paper offers the first application of the European Tax Analyzer for analysing the development of a transition country's tax system. In doing so, it provides insights into the most important drivers of the effective company tax burden in Romania in the past 20 years.

Apart from the significant corporate income tax rate decrease from 45% to 16%, the descriptive analysis of the development of corporate taxation in Romania shows that the decrease of the corporate income tax rate has been accompanied by a great variety of reform measures concerning the tax base of corporate income tax. The most important changes concern the depreciation allowances, provisions that restrict the deductibility of interest and the treatment of losses. The descriptive analysis indicates that the decrease of the Romanian corporate income tax rate has not been accompanied by a broadening of the corporate income tax base.

The insights of the descriptive analysis of the development of the Romanian corporate tax system are confirmed by the analysis of the effective company tax burden based on the European Tax Analyzer. We find that the effective company tax burden has decreased significantly from 1992 to 2010 by EUR 29,282,603 (equalling 182.89% relating to the benchmark tax regime 2010). This striking decline is mainly attributed to the continuous tax rate cuts over the last decades starting from 45% in 1992 to a uniform rate of 16% which was introduced in 2005 and is still in place today.

The quantitative analysis based on the model company furthermore confirms the first impression of the qualitative analysis that the reduction of the corporate income tax rate has not been accompanied by a broadening of the corporate income tax base.

As for the non-profit taxes, we find that their share in the overall effective tax burden has consistently increased over time. Apart from the technical effect triggered by the continuous re-

[19] For a detailed discussion of the negative implications of tax competition based on national corporate tax rates under a CCCTB, see Spengel, 2008.

duction of the corporate income tax rate, the increasing tax rates for building tax and especially for land tax caused the increase of the share of such taxes in the overall tax burden from 5.55% in 1992 to 7.27% in 2010.

When comparing Romania's tax regime with the six other Central and Eastern European EU accession countries, our analysis reveals Romania's advantageous position in the country ranking. Only Bulgaria provides a significant lower tax burden, which is mainly due to its significantly lower statutory tax rate of 10%. Yet, a corporate income tax rate of approximately 9.5% would not only place Romania ahead of Bulgaria but also on top of the overall European country ranking assuming that all other jurisdictions do not amend their tax system.

References

Davis, Steven and Magnus Henrekson (2005), Tax Effects on Work Activity, Industry Mix and Shadow Economy Size: Evidence from Rich-Country Comparisons, in: Gomez-Salvador, Ramon, Ana Lamo, Barbara Petrongolo, Melanie Ward and Etienne Wasmer (eds.), *Labour Supply and Incentives to Work in Europe*, Northampton.

Devereux, Michael P. (2007), Taxes in the EU New Member States and the Location of Capital and Profit, *Oxford Centre for Business Taxation Working Paper* 07/03.

Devereux, Michael P. (2008), Business taxation in a globalized world, *Oxford Review of Economic Policy* 24 (4), 2008, 625–638.

Devereux, Michael P., Christina Elschner, Dieter Endres and Christoph Spengel (2009), Effective Tax Levels using the Devereux/Griffth Methodology. Report 2009, Project for the EU Commission TAXUD/2008/CC/099, Mannheim and Oxford.

Devereux, Michael P., Rachel Griffith and Alexander Klemm (2002), Corproate income tax reforms and international tax competition, *Economic Policy* 17 (35), 450-495.

Dobrotă, G.; Chirculescu, M.F. - Impact of Tax Policy in Romania on Budget Revenues, in: Bolundut, Ioan-Lucian (2009), *Anals of the University of Petroşani – Economics*, vol. 9, part I, 207-212.

Dourado, Ana P. and Rita de la Feria (2008), Thin Capitalization Rules in the Context of the CCCTB'. *Oxford University Centre for Business Taxation Working Paper* 08/04.

Drăcea, Marcel (2008), The implications of the accession to the European Union upon taxation in Romania, in: *Annals of University of Craiova - Economic Sciences Series*, vol. 2, 458-465.

Ellis, Joseph M. (2010), Flat Tax Revolution?: Policy Change and Policy Diffusion in Eastern Europe, Ann Arbor.

European Commission (2001), Company Taxation in the Internal Market, SEC (2001) 1681, *Commission Staff Working Paper*, Brussels.

European Commission (2011), Proposal for a Council Directive on a Common Consolidated Corporate Tax Base (CCCTB), ECO/302 CCCTB, Brussels.

Feld, Lars P. and Jost H. Heckemeyer (2011), FDI and Taxation: A Meta-Study, *Journal of Economic Surveys* 25 (2), 233-272.

Finke, Katharina, Jost H. Heckemeyer, Timo Reister and Christoph Spengel (2010), Impact of Tax Rate Cut Cum Base Broadening Reforms on Heterogeneous Firms – Learnings from the German Tax Reform 2008, *ZEW Discussion Paper* No. 10-036.

Gutekunst, Gerd (2005), Steuerbelastungen und Steuerwirkungen bei nationaler und grenzüberschreitender Geschäftstätigkeit, Lohmar.

Jacob, Martin, Andreas Pasedag und Franz W. Wagner (2011), Werden niedrige Steuersätze in Osteuropa durch Verzicht auf Verlustverrechnung erkauft?, *Perspektiven der Wirtschaftspolitik* 12(1), 72–91.

Jacobs, Otto H. and Christoph Spengel (1996), European Tax Analyzer, Baden-Baden.

Jacobs, Otto H. and Christoph Spengel (2002), Effective Tax Burden of Companies in Europe – Current Situation, Past Developments and Simulation of Reforms, Heidelberg.

Keen, Michael, Yitae Kim and Ricardo Varsano (2008), The "flat tax(es)": principles and experience, *International Tax and Public Finance* 15, 712–751.

Loretz, Simon (2008), Corporate Taxation in the OECD in a wider context, *Oxford Review of Economic Policy* 24 (4), 639-660.

Mutaşcu, Mihai Ioan and Dan Constantin Dănulețiu (2011), Taxes and Economic Growth in Romania. A VAR Approach, *Annales Universitatis Apulensis Series Oeconomica*, 13(1), 94-105.

Spengel, Christoph (2008), Concept and Necessity of a Common Tax Base – an Academic Introduction, in: Schön, Wolfgang, Ulrich Schreiber and Christoph Spengel (Eds.), A Common Consolidated Corporate Tax Base for Europe – *Eine einheitliche Körperschaftsteuerbemessungsgrundlage für Europa*, Heidelberg, 1-47

Spengel, Christoph and Andreas Oestreicher, (2011), Common Corporate Tax Base in the EU- Impact on the Size of Tax Bases and and Effective Tax Burdens, *ZEW Economic Studies* No. 43, Heidelberg.

Spengel, Christoph and Benedikt Zinn (2011), Non-profit Taxation on Corporations in the EU: Lessons from Corporate Tax Reforms in Germany and Tax Implications of the Global Economic Crisis, *Intertax* 39 (10), 494-520.

Voinea, Liviu and Flaviu Mihăescu (2009), The Impact of the Flat Tax Reform on the Inequality – The Case of Romania, *Romanian Journal of Economic Forecasting*, 12(4), 19-41.

Appendix

Table A-1: ATM tax scale 2009-2010

Total annual revenue (RON)	Annual minimum tax (RON)
0 – 52,000	2,200
52,001 – 215,000	4,300
215,001 – 430,000	6,500
430,001 – 4,300,000	8,600
4,300,001 – 21,500,000	11,000
21,500,001 – 129,000,000	22,000
Over 129,000,001	43,000

Table A-2: Law provisions on depreciation

Law provision	Period
Law no. 62 of 1968 concerning fixed funds depreciation in Official Bulletin no. 170 of 28th December, 1968	1990 - 1993
Government Decision no. 266 of 1994 concerning classification and useful life of fixed assets Official Monitor no. 180 of 15th July, 1994	1994 - 1998
Government Decision no. 964 of 1998 concerning classification and useful life of fixed assets in Official Monitor no. 520 of 30th December, 1998	1999 - 2004
Government Decision no. 2139 of 2004 concerning classification and useful life of fixed assets in Official Monitor no. 46 of 13th January, 2005	2005 - 2010

Table A-3: Depreciation rates pool depreciation 1995-1997

Category	Economic useful life	Depreciation rate
1	up to 4 years	40%
2	5 to 8 years	17%
3	9 to 12 years	10%
4	13 to 20 years	7.0%
5	21 to 30 years	4.5%
6	above 30 years	2.0%

Table A-4: Land tax rates 1992-2010 (industrial sites zone C)

Year	Types of localities		
	municipalities	towns	villages
	(RON per10.000 sqm)		
1992-1994	0.5	0.4	--
1995-1997	45	30	--
1998	135	90	--

Year	Types of localities					
	0	I	II	III	IV	V
	(RON per10.000 sqm)					
1999	1,500	1,000	750	500	250	--
2000	2,187	1,458	1,094	729	365	--
2001	3,186	2,124	1,593	1,062	531	--
2002	4,286	2,857	2,143	1,429	714	--
2003	3,700	2,500	1,900	1,200	300	200
2004	4,095	2,765	2,100	1,330	335	225
2005	4,385	3,000	2,250	1,425	360	240
2006-2009	4,648	3,180	2,385	1,511	382	254
2010	5,600	3,832	2,874	1,821	460	306