



PUBLIC DEBT ANALYSIS BASED ON SUSTAINABILITY INDICATORS

Doina DASCĂLU

"Spiru Haret" University, Ion Ghica Street, no. 13, Bucharest, 030045, Romania, Tel.: +40214551000, Fax: +40213143900, Email: doina.dascalu@rcc.ro

Abstract

This article is an analysis of public debt, in terms of sustainability and vulnerability indicators, under a functioning market economy. The problems encountered regarding the high level of public debt or the potential risks of budgetary pressure converge to the idea that sustainability of public finances should be a major challenge for public policy.

Thus, the policy adequate to address public finance sustainability must have as its starting point the overall strategy of the European Union, as well as the economic development of Member States, focusing on the most important performance components, namely, reducing public debt levels, increasing productivity and employment and, last but not the least, reforming social security systems.

In order to achieve sustainable levels of public debt, the European Union Member States are required to establish and accomplish medium term strategic budgetary goals to ensure a downward trend in public debt.

Keywords: *public debt; public debt sustainability; vulnerability; budget deficit; gross domestic product (GDP); level of indebtedness; European System of Accounts; Maastricht Treaty.*

JEL Classification: E62, H63, O11, O47



Introduction – Considerations on Public Debt

In the past two decades, destabilizing phenomena were recorded worldwide, considered *financial crises* that have adversely affected the states' economies by affecting accumulated debt management capabilities, including the methods of establishing their repayment sources. Disturbing aspects have led to the emergence of budgetary difficulties, which was considered as a challenge to public debt managers who currently have the possibility to activate on financial markets fairly sophisticated and complex.

As mentioned before, the article contains an analysis of public debt in terms of sustainability and vulnerability indicators, which, in the context of a functional market economy, converges to the idea that the sustainability of public finances should constitute a major challenge at public policy level. This analysis of the public debt in terms of sustainability and vulnerability indicators is important since an inadequate management of public debt may lead in time to its not being sustainable, respectively attaining a public debt level which would not allow the observance, by the executive power of each state, of current and future obligations concerning public debt servicing. Based on the analysis of the sustainability and vulnerability indicators, in parallel with the impossibility to maintain an acceptable economic development level, the decision-making factors with competences in the field of public debt management may reduce or reschedule the public debt, which generates major financial crises, with a significant negative economic impact.

Given that economies are facing unforeseen events, such as damage to private sector balance, which may have consequences such as triggering fiscal, financial and economic crises, strategies for public debt can become dangerously vulnerable. Also, economic shocks may have, individually or together, a negative impact on public debt of an economy, which can lead to vulnerability of public debt strategy of, which, in turn, may have an impact on the global economy and, last but not least, it can seriously damage a state's financial situation.

The research is based on an extensive documentation, being substantiated scientifically by a comprehensive bibliographical material and relevant (as described in the bibliographic references). The bibliography



includes books, documents, articles, studies, regulations and standards, with the source literature both Romanian and foreign. Sources have a great variety and a multidisciplinary content.

The choice of methods of research, as well as the formulation of the plan for the survey, for collecting data and information, for the analysis and interpretation of data and the exposure of the research results, are completed presentation of graphs showing the evolution and trends specific to Romania for the 2010-2014 period, such as: the public debt, the Gross Domestic Product, and the public debt and GDP per capita trends in Romania.

The *recent examples* that were recorded in emerging economies have shown that shocks can turn into financial crises creating difficulties in managing public debt and that may have significant budgetary implications.

An emerging market is considered a developing market. The characteristic elements of the emerging markets are considered to be both *industrialization effort as well as social and/or business activity that records fast growth*. Under these circumstances, an emerging economy features the following characteristics:

- 1) an intermediate GDP (income calculated at purchasing power parity is between 10% and 75% of EU average per capita);
- 2) an accelerated economic growth (*in the past decade, the economy analysed had an economic growth rate which resulted in a decrease of the development gap compared to advanced countries*);
- 3) institutional changes and a process of economic openness recorded for a period of at least 10 years.

By way of example, it can be stated that in 2012, the International Monetary Fund¹ (IMF, 2012) considered the following countries as having emerging economies, namely: Argentina, Brazil, Bulgaria, Chile, China, Colombia, Estonia, Hungary, India, Indonesia, Latvia, Lithuania, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, **Romania**, Russia, South Africa, Thailand, Turkey, Ukraine, and Venezuela.

¹ <http://www.imf.org/external/np/pp/eng/2012/061512.pdf>, *Fiscal Policy and Employment in Advanced and Emerging Economies*, Prepared by the Fiscal Affairs Department, Approved by Carlo Cottarelli, June 15th, 2012.



For the most part, the financial needs of the states are covered of taxes, fees, contributions, levies that the state charges from taxpayers who are considered *ordinary resources*. Typically, these are insufficient and, then, both the state and local authorities use different kind of financial resources, known as *extraordinary*, namely *public loans*. In any economy, this kind of loans are used to cover the so-called “*minuses*” involved in the operation of a fiscal system or failure to collect on time the revenue expected to be collected at the budget and from the necessity of performing some expenses that become due. Under a functioning market economy, the state uses this source of funding to promote new investments, which are intended both for modernization and innovation of existing assets, context in which the concept of public *debt is born*.

Also, one of the basic principles of developing any type of budget is budget balance but it is not done often, directly, by covering budget spending with budget revenue, situations in which it is stated that the budget was elaborated with *financing deficit* [Bistriceanu, 2001] which is named the *budget deficit*.

In order to achieve the objectives of public debt management and to emphasize a balance between financial funds resources and the expenditure level, the state through the Ministry of Public Finance uses certain financial instruments. One of these tools is the *State loan*, notion judged to be the material result of an agreement recorded in a document, signed by the state through its financial agent with a natural person or entity, in order to mobilise from them some cash on hand, for a determined period of time in terms of repayment and interest, a priori established.

As highlighted in the pertaining literature², public debt managers currently operate in sophisticated and complex financial environments. A global capital market can generate numerous benefits (*for example, easier access to a larger portfolio of capital at a lower cost, more efficient domestic capital markets and the ability to better tailor risks using new*

² ISSAI [The International Standards of Supreme Audit Institutions] 5440 – “ISSAI 5440 Guidance for Conducting a Public Debt Audit – The Use of Substantive Tests in Financial Audits”.



financial instruments). However, public debt strategies can become dangerously vulnerable when faced with unforeseen events such as deterioration of the private sector balance, which may trigger fiscal, financial and economic crises. [Dascălu, 2015]

Public Debt Management

At international level³, the aspects concerning public debt management undergo a permanent change, triggered by the development of states economies.

Public debt management is considered the process of establishing and implementing the strategy for the administration and management of public debt in order to contract loans necessary at levels of cost and risk required. It should cover the main financial obligations over which the central, regional and local governments exercise their control.

Public debt management is particularly important because:

- ✓ it can provide a level and rate of growth of public debt sustainable in a variety of circumstances;
- ✓ long-term public borrowing costs can be reduced, thereby reducing the impact of deficit financing, thus contributing to both fiscal sustainability and public debt;
- ✓ economic crises that may occur due to inadequate structuring of public debt can be avoided;
- ✓ public debt portfolio is usually the largest financial portfolio in one country and may have a major impact on financial stability – consequently, an effective management is essential.

To ensure effective management of public debt, a range of measures that governments can apply can be used, including the development of a legal framework for the provision of overall parameters.

For public debt management activities, allocations of clear powers are required to authorize the issuance of public debt instruments and types of tools that can be used.

Particular attention should be paid to the legal framework which is manifested by organizational agreements on assignment of responsibilities

³ *Idem.*

between the Ministry of Public Finance, National Bank of Romania and the separate organizational speciality structure which is responsible for public debt management, in terms of policy applied in the field, public debt primary offerings, operations on the secondary market, deposit facilities and agreements governing transactions with public debt instruments. All this must be presented to the public with details of public debt management objectives and measures of cost and risk to be taken.

The guidelines underlying public debt management, as they have been drawn up by the International Monetary Fund and World Bank, identify characteristics of an effective public debt management. Here are some of the most important guidelines:

✓ *coordination with monetary and fiscal policies*, situation in which public debt managers, fiscal policy advisers, and central banks have the obligation to understand the objectives of each of them, given the interdependencies between their different policies' instruments. If the level of financial development allows, then it is necessary to separate public debt management, monetary policy objectives and responsibilities;

✓ *the availability of information*, which should allow the public to access information relating to the process of formulation and reporting of policies for public debt management, the details on the portfolio and structure of public debt and financial assets – including currency, maturity and interest rate structure;

✓ *public debt management strategy*, which assumes a public debt management strategy, which specifies the objectives of public debt management, given the inherent risks. This should be complemented by the return of cash management policies to enable the authorities involved to fulfil financial obligations as they become due, in a high safety measure;

✓ *legal framework of risk management*, which involves developing an appropriate framework to allow public debt managers to identify, administer and manage the compromises between risks and costs expected related to public debt portfolio;

✓ *development and maintenance of efficient market for public debt instruments*, situations where public debt managers should ensure that their policies and operations are consistent and keep pace with the development of an efficient market for public debt instruments.



Public Debt Sustainability Considerations

In accordance with current legal provisions, in Romania... “*The Ministry of Public Finance performs the strategy function, ensuring strategy development in the field of public debt, and the public debt management function*”⁴.

The main tasks of the Ministry of Public Finance in this area are:

- *contracting and repayment of public debt;*
- *managing risks related to the government debt portfolio;*
- *drafting of documents concerning the annual general account of the public debt, which is presented to the Government for acceptance, in order to be submitted to the Parliament for adoption;*
- *contracting and guaranteeing State loans on the domestic and foreign financial market, for the purposes and within the competence established by law;*
- *monitoring the compliance with commitments assumed through agreements with international financial institutions on public debt.*

In addition, certain principles were established by legal provisions⁵, underlying the efficient management of public finance and public debt, which must serve the public interest in the long term, help economic improvement and development of fiscal and budgetary policies, within a sustainable framework. For these reasons, national institutions with tasks in the field are required to lead prudently the fiscal and budgetary policies, and resources, budgetary obligations and fiscal risks should be managed so as to ensure a sustainable fiscal position in the medium and long term.

In this context, *public finance sustainability* requires that, in the medium and long term, fiscal and budgetary policies offer the possibility of risk or contingency management, without requiring significant adjustments

⁴ Government Decision no. 34/2009 on the organisation and operation of the Ministry of Public Finance, published in the Official Bulletin no. 52 of 28.01.2009, as subsequently modified and completed.

⁵ Law no. 69/2010 on fiscal and budgetary accountability, published in the Official Bulletin no. 252 of April 20th, 2010, updated in 2015.



to budget expenses, income or deficit, which have destabilizing economic and social effects.

The concept of public finance is associated with the “*State, administrative-territorial units and other public institutions, in relation to their resources, expenses, loans and debt*”. [Văcărel et al., 2008] According to some studies in public finance and taxation... “*The field of public finance forms an area of research that deals with income and expenditure matters of governments (at federal, state and local level). In modern times, these matters are divided into four major groups: public revenue, public expenditure, public debt and certain matters related to the fiscal system as a whole, such as local government and fiscal policy.*” [Groves, 1964]

A review of the above shows that these four major groups constitute basic elements to be considered in the analysis of public debt sustainability, considered a concept interrelated with public finance sustainability.

Indicators Used in the Analysis of Public Debt Sustainability

International Standards of Supreme Audit Institutions⁶ provide that... “*public debt sustainability is the degree to which a government can maintain existing programs and fulfil the requirements of creditors, without increasing the public debt burden on the economy.*”

Based on the results made public on debt sustainability, solutions may be *developed* concerning a government’s ability to maintain the same direction of expenditure and revenues, or if adjustments are necessary to maintain government debt as a constant proportion of the Gross Domestic Product (hereinafter called “GDP”).

Public debt sustainability analysis is a complex exercise and with multiple implications, and should consider the following issues:

- trend of the *public debt to gross domestic product (GDP)* ratio;
- *public debt to GDP* ratio, which is consolidated at a high level, but with acceptable refinancing risk and maintaining the trend of economic growth;
- *public debt structure*, which can increase the likelihood of negative circumstances over it.

⁶ ISSAI [The International Standards of Supreme Audit Institutions] 5410 “*Guidance for Planning and Conducting an Audit of Internal Controls of Public Debt*”.



If at the beginning of the transition period, in 1990, public debt in Romania was not significant, but in the coming years, its accumulation process accelerated. In absolute terms, public debt is of no particular relevance in quantifying the state of economy or the danger posed to it⁷.

The government debt to gross domestic product ratio, one of the convergence criteria laid down by the Protocol on the excessive deficit procedure annexed to the Treaty of Maastricht, is the most important indicator in measuring the indebtedness of a country considering its economic activity, highlighting the solvency of the country, if a decision was taken concerning its repayment in full in that year.

Sustainability analysis aims to provide answers regarding the government's ability to maintain the same direction of expenditure and revenue, or, whether it will have to make adjustments to maintain public debt constant as a proportion of GDP.

In order to exemplify the analysis of this indicator, we present below the public debt trend, the GDP trend, and the public debt as a percentage of the GDP for the period 2010-2014, registered for the Romanian economy.

Chart 1 shows the trend of public debt in Romania, in the period 2010-2014.

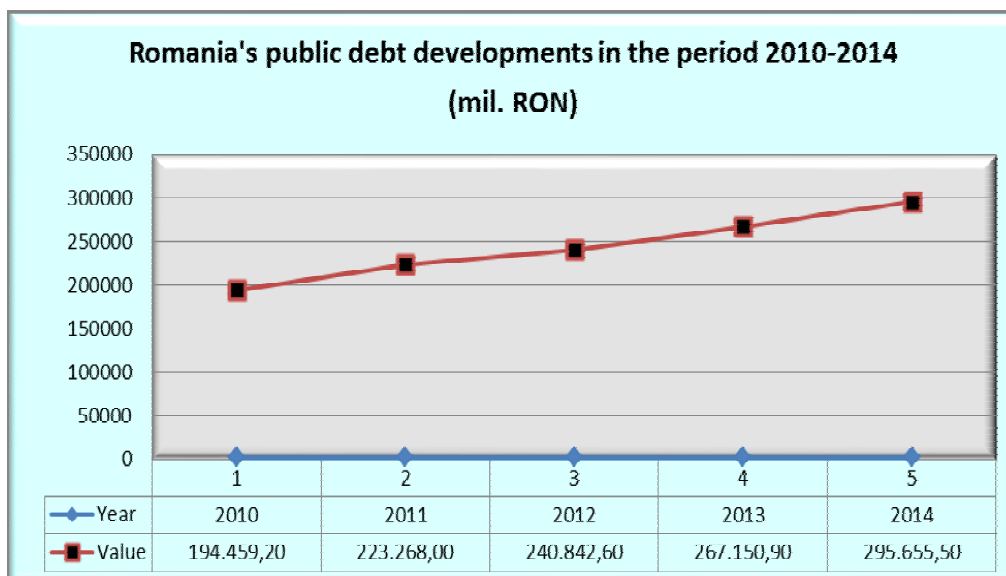


Figure no. 1. The public debt trend during 2010-2014 (mil. RON)

Source: Data published by the National Institute of Statistics, www.inse.ro

⁷ www.curteadeconturi.ro. *Financial Audit Report of the Public Debt Annual General Account for the year 2014, at the Ministry of Public Finances.*



Chart 2 shows the GDP trend in Romania, in the period 2010-2014.

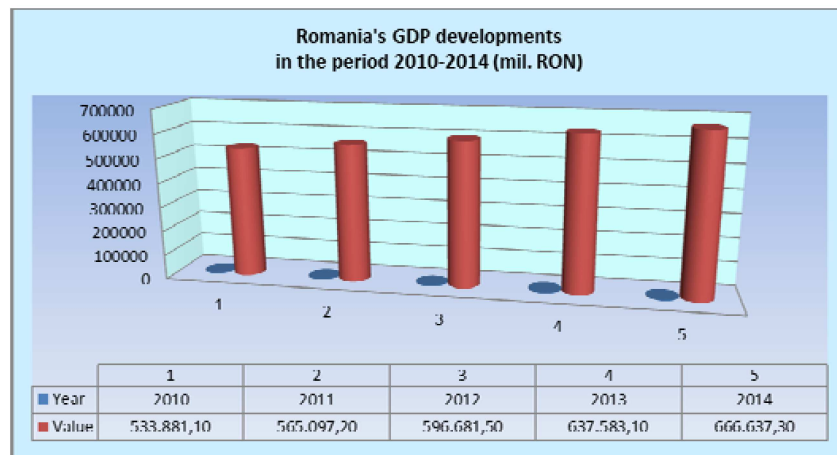


Figure no. 2. The Gross Domestic Product trend during 2010-2014 (mil. RON)

Source: Data published by the National Institute of Statistics, www.insse.ro

The trend of public debt level⁸, of Romania's GDP and of the former's weight in the GDP – in the period 31.12.1990-31.12.2014 – is shown in the chart below:

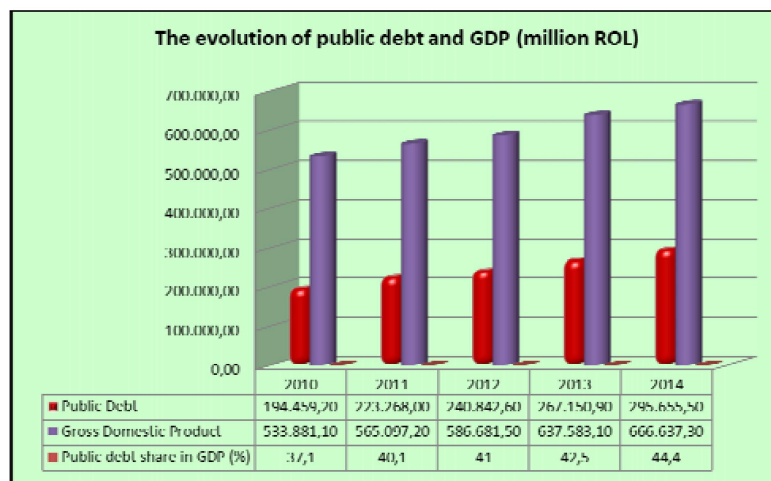


Figure no. 3. The public debt and GDP trends during 2010-2014 (mil. RON)

Source: Data published by the National Institute of Statistics, www.insse.ro

⁸ Data published by the National Institute of Statistics, www.insse.ro



An analysis of the data presented shows that, in 2014, the public debt grew at a higher rate than economic growth compared to 2010, a situation in which public finance sustainability should be a major challenge to the application of public policies in the field.

The most commonly used ratio to analyse sustainability is the *Public debt to GDP ratio*, which measures the indebtedness level in relation to the economic results of a country, and is recognized as *the most important ratio in measuring indebtedness*, while stressing country's solvency.

In addition, the public debt of the state to GDP ratio represents one of the convergence criteria that were established by the *Protocol on the excessive deficit procedure* annexed to the Treaty of Maastricht⁹, which demonstrates that it has been and continues to be significantly below the reference value of **60%** of the GDP.

For reasons of public debt sustainability in the group of emerging economies, as well as for moderating interest expenses and their impact on primary deficit, fiscal consolidation must place a public debt ceiling, which is below 40% of GDP¹⁰.

A review of the above data shows that, although the public debt to gross domestic product ratio is below the alert threshold of 60%, it is considered that maintaining a growth rate of public debt higher than the economic growth rate will increase the solvency risk.

Indebtedness of a country should not be analysed only strictly as a mathematical value, but it must be correlated with the level of public debt per capita and GDP per capita, because at the same percentage of GDP, the affordability of the public debt burden is much lower in developing countries (with low GDP) than in developed countries (which, by default, have a much higher level of GDP).

Sustainable fulfilment of the Maastricht criteria is conditional on achieving a high level of real convergence, the GDP/capita representing the best synthetic indicator in this respect.

The following chart shows the public debt and GDP trends per capita in Romania, during 2010-2014.

⁹ Treaty on the European Union, published in the Official Journal C191 of July 29th, 1992.

¹⁰ In keeping with the *Report on financial stability 2012*, drafted by the National Bank of Romania – Financial Stability Directorate.

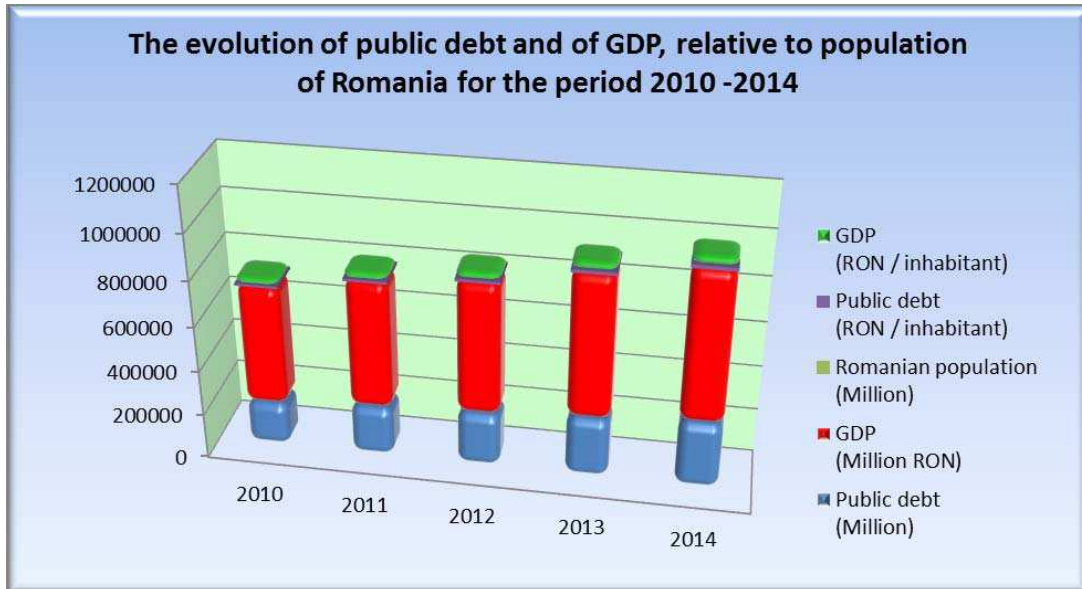


Figure no. 4. The public debt and GDP per capita trends in Romania during 2010-2014 (mil. RON)

Source: Data published by the National Institute of Statistics, www.insse.ro

Given that Romania's population has been declining permanently and the volume of public debt of the country continually grew, the indebtedness of the population has grown at a fast pace, registering at the end of 2014 **RON 14,850.66/capita**¹¹. It thus appears that the public debt/capita ratio showed a sharp rise compared to the GDP/capita.

Conclusion

In order to maintain the public debt at an acceptable level, it is necessary to focus the efforts and financial resources of the Romanian economy towards *GDP growth*, through the development of both the industrial sector (using investments in intelligent technologies that generate added value) and the agricultural sector (organic farming), but also through the development of constructions and services for the population.

GDP growth can be achieved by *reducing the tax burden on the economy*, especially on the *manufacturing sector in all branches of the economy* and by *increased collection of taxes*, which can generate financial

¹¹ Data published by the National Institute of Statistics, www.insse.ro.

resources, *funds* that should be *oriented* with priority towards *investments* in the manufacturing sector of the Romanian economy.

In addition, the GDP growth, increasing exports and reducing imports will have the effect of increasing the international reserves (foreign currency) of the country, increasing capacity to repay foreign funds borrowed on capital markets and financial banking and non-banking institutions, but also decreasing the need of the economy to borrow both internal and external funds.

References

1. *** Commission Regulation (EC, Euratom) No. 2343/2002 of 23 December 2002 on the framework Financial Regulation for the bodies referred to in Article 185 of Council Regulation (EC, Euratom) No. 1605/2002 on the Financial Regulation applicable to the general budget of the European Communities, Official Journal of the European Union L 357 by 31 December 2002.
2. *** Constitution of Romania, published in the Official Bulletin of Romania, part I, no. 233 of November 21st, 1991, coming into force after approval by referendum of December 8th, 1991.
3. *** Council Regulation (EC) No. 479/2009 of 25 May 2009 on the application of the Protocol on the excessive deficit procedure annexed to the Treaty establishing the European Community, re-issued.
4. *** Financial Audit Report of the Public Debt Annual General Account for the year 2014, at the Ministry of Public Finances, www.curteadeconturi.ro.
5. *** Fiscal Policy and Employment in Advanced and Emerging Economies, Prepared by the Fiscal Affairs Department Approved by Carlo Cottarelli, June 15th, 2012, <http://www.imf.org/external/np/pp/eng/2012/061512.pdf>.
6. *** Government Decision no. 34/2009 on the organisation and operation of the Ministry of Public Finances, published in the Official Bulletin no. 52 of 28.01.2009, as subsequently modified and completed.
7. *** Government Emergency Ordinance no. 64/2007 on public debt published in the Official Bulletin, Part I, no. 439 of 29 June 2007.
8. *** Law no. 313/2004 on public debt, published in the Official Bulletin no. 577 of 29 June 2004.
9. *** Law no. 69/2010 on fiscal and budgetary accountability, published in the Official Bulletin no. 252 of April 20th, 2010, updated in 2015.
10. *** Law no. 81/1999 on public debt, published in the Official Bulletin no. 215 of 17 May 1999.



11. *** Law no. 91/1993 on public debt, published in the Official Bulletin no. 3 of 10 January, 1994.
12. *** Law no. 94/1992, on the organisation and operation of the Court of Accounts, re-issued in the Official Bulletin no. 282 of 29 April 2009.
13. *** Lima Declaration on Government Audit Guidelines, IX INTOSAI (International Organisation of Supreme Audit Institutions) Congress, Financial Audit Journal no. 1/2000, Editor The Romanian Court of Accounts.
14. *** *Report on Financial Stability 2012*, drafted by the National Bank of Romania – Financial Stability Directorate.
15. *** *Treaty on the European Union*, published in the Official Journal C191 of July 29th, 1992.
16. Bîrzea, Cezar, *Policies and Institutions of the European Union* (București: Editura Corint, 2001).
17. Bistriceanu, Gh.D., *Lexicon de finanțe, bănci, asigurări*, vol. II (București: Editura Economică, 2001).
18. Dascălu, Elena Doina, “Public debts trends in the current economic context, from both national and international perspective”, *Journal of Economic Development, Environment and People*, 2015, <http://jedep.spiruharet.ro>.
19. Doyle J., W. Ge and S. McVay, “Determinants of Weaknesses in Internal Control over Financial Reporting”, *Journal of Accounting and Economics* (2007).
20. Groves, Harold M., *Financing Government*, sixth edition (New York, Chicago, San Francisco: Holt, Rinehart and Winston, 1964).
21. ISSAI [The International Standards of Supreme Audit Institutions] – 5410 *Guidance for Planning and Conducting an Audit of Internal Controls of Public Debt*.
22. Kouvertaris, George & Moschonas, Andreas (co-editors), *The Impact of the European Integration, Political, Sociological and Economic Changes* (Westport, Connecticut, London: PRAGER, 1996).
23. Mekson, M.H. et al., *Management*, Third Edition (New York: Harper-Row, 1995).
24. Shultz, William J. & Harriss, C. Lowell, *American Public Finance*, sixth edition (New York, 1954).
25. The European Institute of Romania, *Impact of Community Acquis Adoption on Financial Control in Romania*, study no. 3, București, 2004.
26. Văcărel, Iulian et al., *Finanțe publice*, ediția a 2-a (București: Editura Didactică și Pedagogică, 2008).
27. www.insse.ro