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## SPECIFIC FUNDING OF FISCAL DEFICIT IN SERBIA

### Abstract

*This paper will examine whether the privatization receipts were used as a means of reducing the fiscal deficit and public debt servicing in the Republic of Serbia. The empirical study incorporates monthly data series from 2005 to 2012. The results of the study show that revenues from privatization in Serbia increased the fiscal deficit and public spending, and thus jeopardize the long-term fiscal sustainability. The paper analyzes the level of reduction of external debt and the movement of foreign exchange reserves as an alternative to the use of privatization funds. The analysis shows, although on the short sample, that revenues from privatization in Serbia are not used to pay off debt, but were partially preserved (and accumulated in the form of foreign currency reserves) and partly used to finance current expenditures of the state (and to a lesser extent for financing capital expenditures).*

**Keywords:** *privatization receipts, public debt, fiscal deficit, current expenditure, capital expenditure.*

**JEL classification:** E6

## СПЕЦИФИЧНОСТ ФИНАНСИРАЊА ФИСКАЛНОГ ДЕФИЦИТА У РЕПУБЛИЦИ СРБИЈИ

### Апстракт

*У овом раду испитаће се да ли су приватизациони приходи коришћени као средство смањења фискалног дефицита и сервисирања јавног дуга у Републици Србији. Емпиријска студија обухвата месечне серије података од 2005.-2012. године. Резултати студије показују да су приходи од приватизације у Републици Србији повећали фискални дефицит и јавну потрошњу и тако угрозили дугорочну фискалну одрживост. У раду се анализира и ниво смањења спољног дуга и кретање девизних резерви, као алтернатива за коришћење приватизационих средстава. Анализа показује, иако на кратком узорку, да се приходи од приватизације у Републици Србији не користе за отплату дуга, већ су делимично сачувани (и акумулирани у*

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*виду девизних резерви), а делом коришћени за финансирање текућих расхода државе (а у мањој мери за финансирање капиталних расхода).*

**Кључне речи:** приватизациони приходи, јавни диг, фискални дефицит.

## Introduction

Specificity of financing the fiscal deficit in Serbia is reflected in the fact that until 2009 it was mainly financed by non-credit sources (revenues from privatization and donations). The aforementioned method of financing the fiscal deficit deviates from the standard theoretical models and contributes to the disruption of connections between fiscal deficit and public debt. In this chapter will examine whether the privatization receipts were used as a means of reducing the fiscal deficit and public debt servicing in the Republic of Serbia. The empirical study incorporates monthly data series from 2005 to 2012. The study results show that revenues from privatization in Serbia increased the fiscal deficit and public spending, and thus jeopardize the long-term fiscal sustainability. The paper also analyzes the level of reduction of external debt and the movement of foreign exchange reserves as an alternative to the use of privatization funds.

Privatization receipts in Serbia were a significant category of the budget in the period up to 2009, which is typical for transition economies. As possible ways of using privatization revenues in the literature stand out debt repayment, savings and public spending (current and capital expenditures) (Owyang et al., 2013). Economic theory suggests that it is advisable that the privatization proceeds are used to repay debt, depending on the level of indebtedness of the economy. If, possibly, there is a government decision that they spend, the theory recommends investing in capital investment, and not covering the current expenditures of the economy (Blanchard, 2005; Romer, 2012).

The paper sets three hypotheses consistent with economic theory. The first hypothesis is that privatization receipts were used to finance the fiscal deficit in the Republic of Serbia. The second hypothesis is based on the recommendations of economic theory that privatization revenues were being used for servicing the public debt. Due to the decision of the Government of Serbia that the privatization receipts are used for financing public expenditure, the third hypothesis implies capital investments.

The first part provides an overview of relevant literature on a given topic. The second part econometrically estimates interdependence of privatization receipts and fiscal deficit. The third part of the paper analyzes alternative methods of use of privatization receipts in Serbia. The last section of the paper is conclusion.

## Theoretical background

Privatisation has started in many developed and undeveloped countries. The primary goal of ownership transformation of SOEs were inefficient and which used to be an additional burden to the state budget. The government had to cover the losses of state enterprises. In addition to the primary objective, there are also specific objectives of privatization. These include reduction of state subsidies to public enterprises and the

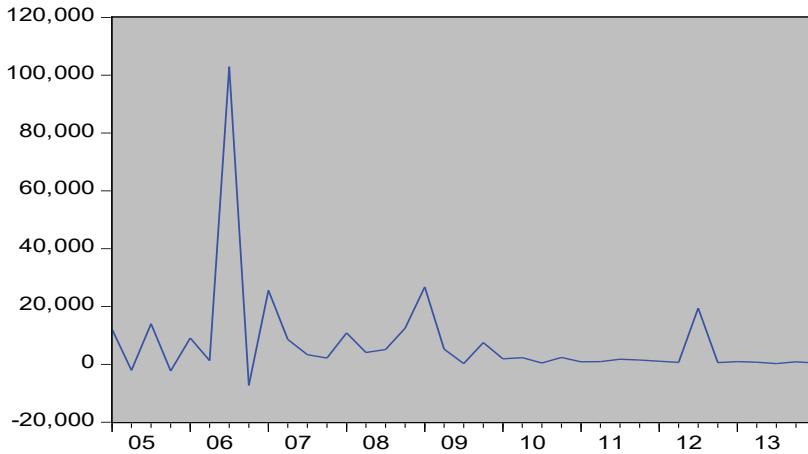
tax revenue from private enterprises. Many empirical studies have investigated the fiscal impact of privatization observing subsidies as public expenditure and tax revenues as public revenue (Flangan, 2008; Yar et al, 2013). The results of these studies show that privatization has failed to meet expectations, and that it has a positive impact on the fiscal deficit.

In the empirical literature macroeconomic effects of privatization are not precluded. Privatization of state enterprises has long been promoted in developing countries because of the belief that it contributes to improving the efficiency of these enterprises and stimulates growth as the macroeconomic objective (Davis et al., 2000; Katsoulakos & Likoianni, 2002). However, as countries have begun the process of privatization, some governments have clearly defined explicitly that the aim of their privatization program is improving the fiscal deficit (Khan, 2006). Numerous studies have aimed to determine the impact of privatization revenue in the fiscal budget balance in developing countries (Rubin, 2008; Rosen & Gayer, 2010). Privatization revenues represent direct budget inflow and governments have the option of saving this money or to spend it (Ramey, 2009; Blias, 2010). As the government is faced with liquidity constraints, privatization revenues are used to finance an even larger deficit (Barnett, 2000; Davis et al. 2000). However, the decision to increase spending using the proceeds from privatization should be done carefully, because the revenues from privatization temporary and spending would be moved up to a higher level of revenue collection that the government is able to exercise (Davis et al., 2000). In the Republic of Serbia interdependence fiscal deficit and privatization revenues is analyzed in the paper Basic T. (2007) using the *OLS* method estimates. This paper served as an inspiration for this paper. The difference is in the methodology, because this paper uses *VAR* methodology. This paper examines whether the privatization revenues are associated with improvement in the budget balance due to servicing external public debt and lower interest payments, or the funds are used to finance an even larger deficit.

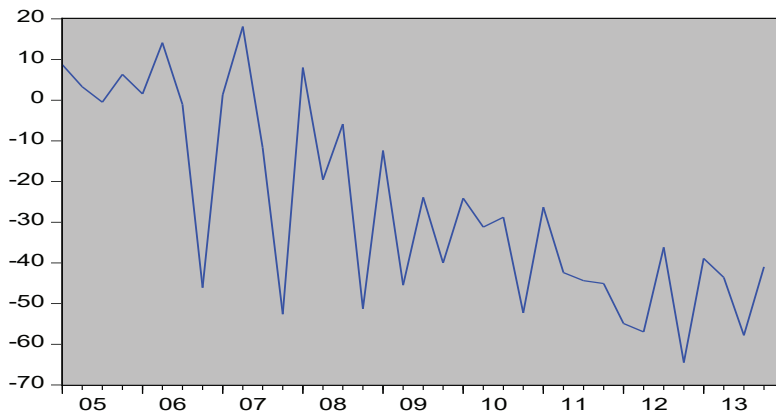
## **Interdependence of the fiscal deficit and privatization receipts in Serbia**

The Republic of Serbia has privatized a total of 851 companies, in the period from 2005 to 2009, and the revenues obtained from privatization are shown in Graph 1. Looking at the fiscal deficit (Graph 2) and privatization revenues as a potential source of its financing (Graph 1) shows that both categories are fairly unstable and that behind the large deficits are the large privatization proceeds with a certain delay.

The hypothesis which starts in econometric research is that privatization revenues in the Republic of Serbia are largely expendable to finance the fiscal deficit. In econometric testing it was first necessary to determine the order cointegration of certain variables by testing the presence of unit root in the time series. After that there is a cointegration analysis by Johansen method (Johansen, 2002; Lutkepohl, 2005; Mladenovic & Nojković, 2005). The summary of results of the expanded Dickey-Fuller unit root test is shown in Table 1. All series are non-stationary level, i.e. stationary during the first differential. For evaluation we used monthly data from the Ministry of Finance of the Republic of Serbia (Bulletin of Public Finance) with quarterly payments.

*Graph 1: Trends in privatization receipts in Serbia in RSD million in 2005- 2012*

*Source: Data are from the database of the Ministry of Finance of the Republic of Serbia, made a graphic illustration of the authors.*

*Figure 2: Trends in fiscal deficits in Serbia, in millions of RSD, 2005-2014 (I quarter)*

*Source: Data are from the database of the Ministry of Finance of the Republic of Serbia, made a graphic illustration of the authors.*

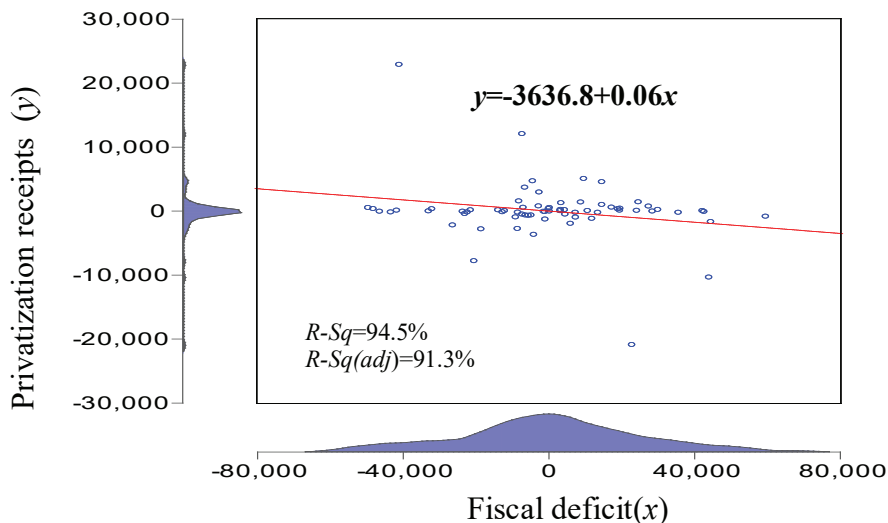
Table 1: Summary of results with the Dickey-Fuller test time series of fiscal balance, privatization receipts, current expenditure and capital expenditure

| Time series            | Level of integration |
|------------------------|----------------------|
| fiscal balance         | $I(1)$               |
| privatization receipts | $I(1)$               |
| current expenditure    | $I(1)$               |
| capital expenditure    | $I(1)$               |

Source: data from the databases of the Republic Institute for Statistics, the Dickey-Fuller test has conducted the authors.

From Table 1 we can see that all-time series with a unit root, which means they are integrated of order one (mark  $I(1)$ ). In addition to statistics, the unit root has an economic interpretation. The presence of unit root in the analyzed time series suggest that negative shocks from the phase of recession permanently reduce their level, in which the economy can return to the stage of prosperity. In general, the presence of unit root in the analyzed time series means that their departure from the long-term trend will be occasional, as emphasized by the traditional theory, but permanent for an indefinite period of time. Illustration and certificates considered linear correlation is evident in the scatter diagram shown in Graph 3.

Graph3: Diagram of dispersion the interdependence of the fiscal deficit and privatization receipts in Serbia in the period 2005-2012



Source: Original data from the database of the Ministry of Finance, the fiscal deficit diagram interdependencies and privatization has produced the authors.

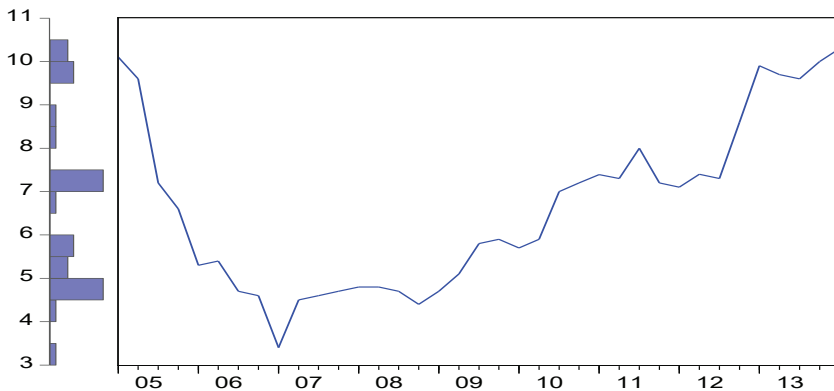
Let us consider a pair of linearly related variables, diagram dispersion of observations of the pairs of their values is shrinking around the straight lines. Conversely,

if the linear relationship does not exist, then scatter diagram will not follow the straight line (Newbold et al., 2010, pp.403). Therefore, the positive econometric estimate (0.061), with a delay of 4 quarters indicates that the fiscal deficit has a statistically significant coefficient depending on the privatization inflows, suggesting that increased privatization revenues in the reporting period are used to increase spending.

## Public debt servicing by privatization receipts in Serbia

Although the previous analysis showed that privatization revenues are still used to finance the fiscal deficit, this paper will show whether there was any alternative use of privatization receipts in Serbia. It involves the analysis of the first level of external debt, for whose financing, according to economic theory, it is the most appropriate to use privatization revenues. Secondly, there is the analysis of changes in foreign exchange reserves, as a form of any accumulated savings of privatization receipts. Thirdly, if privatization revenues are already spent, the paper will show whether it was in the form of investment spending which, according to economic theory, is the preferred form of public spending (Hernandez-Cata, 2004; IMF, 2005.; IMF, 2005.; Leeper et al., 2010.; Dabla-Noris et al., 2011.). The research on the hypotheses on the financing of public debt by privatization receipts in Serbia begins by observing the movement of foreign debt.

*Graph 4: Trends in foreign debt in the Republic of Serbia, 2005- 2014 (I quarter), millions of euros*

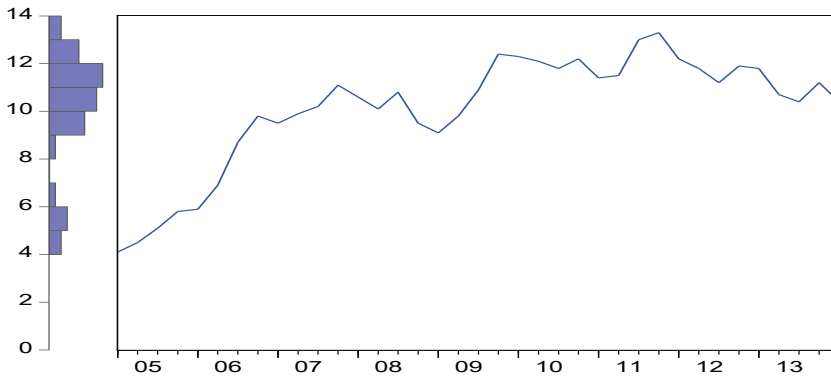


*Source: Data are from the database of the Ministry of Finance of the Republic of Serbia, the graphic display are done by the authors.*

Graph 4 shows a trend of foreign debt in the period from 2005 to 2014 (the first quarter) in millions of euros. It cannot be seen in the graph that there was a significant reduction in debt during the period. The reduction was only up to the III quarter of 2006, and then, despite the huge inflow of privatization receipts until 2009, external debt still slightly increased, which suggests that privatization receipts were spent for this purpose.

Graph 5 represents the movement of foreign exchange reserves, which marked a steady growth during the inflow of privatization receipts. This trend clearly indicates some savings of the government from privatization receipts.

*Graph 5: Trends in foreign exchange reserves in the Republic of Serbia, the period from 2005 to 2014. (I quarter), in millions of euros*

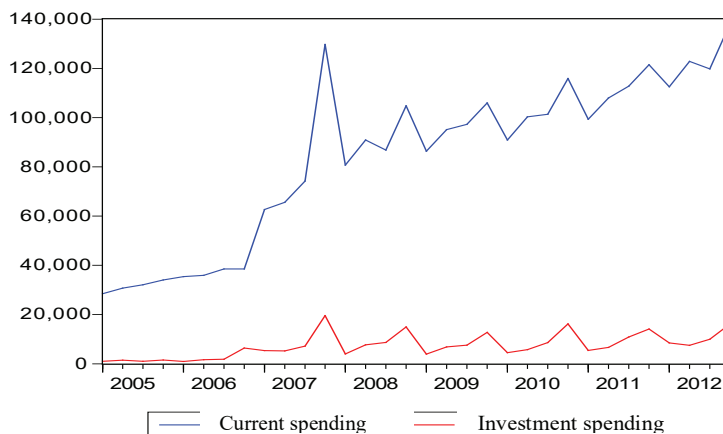


*Source: Data are from the database of the Ministry of Finance of the Republic of Serbia, the graphic display are done by the authors.*

The Graph 6 shows information about the current and capital expenditure budget of the Republic of Serbia in the period from the I quarter of 2005 to the IV quarter of 2012. We see that both categories show a rising trend, where growth is more obvious in the current expenditures. Also, the data clearly show seasonal behavior, which coincides in both series.

Based on the data which can be seen on Graph 6 it can be concluded that the growth of current expenditure substantially higher than the growth in capital expenditure, thus indicating the likelihood that the revenues from privatization were used to fund increased current spending.

*Graph 6: Trends in current and investment spending in the Republic of Serbia in the period from 2005 to 2012, millions of RSD*



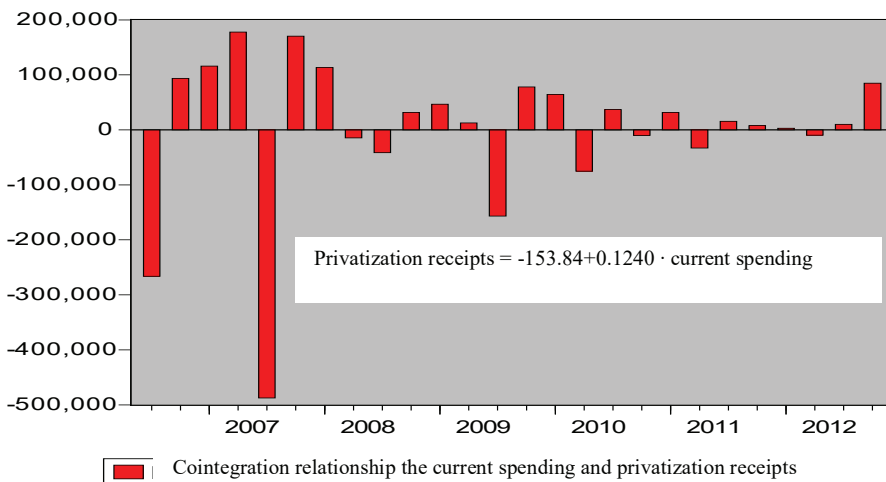
*Source: Ministry of Finance of the Republic of Serbia, the publication Bulletin of Public Finance Published in December during the period from 2005 to 2012. The graphic display are done by the authors.*

Econometrically, in the same way that the relationship between privatization and the deficit in this part of the paper has been tested, we tested the relationship between privatization and liquid components of public expenditure as well as the ratio of privatization and capital components of public expenditure. The analysis of the short-term elasticity of current expenditures and privatization revenues using the VAR model shows that privatization revenues significantly affect the increase in current spending, with a delay of two quarters (positive elasticity coefficient 0.1687). The results of the integration analysis are given in the Graph 7 and the Graph 8.

The analysis shows, although on the short sample, that privatization receipts in the Republic of Serbia are not used for debt repayment, but were partially preserved (and accumulated in the form of foreign exchange reserves) and partly used to finance current expenditures of the state (and to a lesser extent for financing capital expenditures).

The positive and statistically significant relationship is between the privatization receipts and the deficit, as well as revenues from privatization and current and capital expenditures, where the link between privatization and current expenditures is stronger. The resulting positive correlation between privatization receipts and fiscal deficit in Serbia is in contradiction with the results from a sample of OECD countries and even with results from some transition countries which is even more worrying.

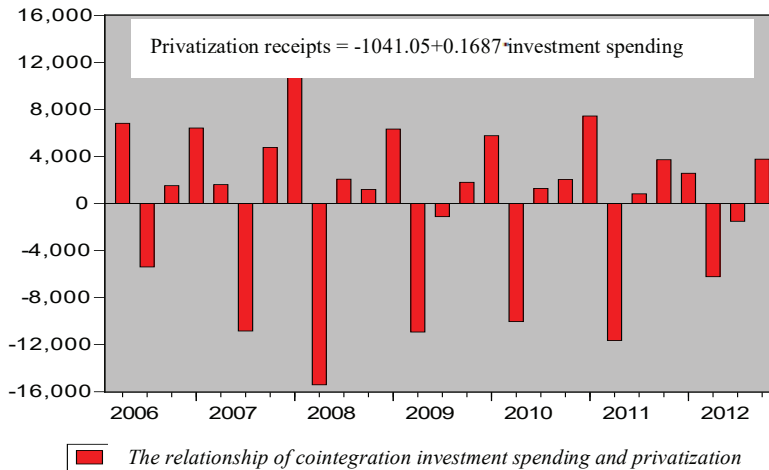
*Graph 7: Cointegration relationship the current spending and privatization receipts in Serbia, 2005- 2012*



*Source: Data are from the database of the Ministry of Finance of the Republic of Serbia, as well as the integration ratio is calculated and graphically interpreted by the authors.*



*Graph 8: The relationship of cointegration investment spending and privatization receipts in the Republic of Serbia, 2005-2012*



*Source: Data are from the database of the Ministry of Finance of the Republic of Serbia, as well as the integration ratio is calculated and graphically interpreted by the authors.*

By forming a statistical relationship, it can be concluded that the financing of current expenditures from a new source is wrong, and suggests that it would be better to keep these funds (i.e. pay off debt or to accumulate reserves), or spend them in the form of capital investments (with monitoring financial effects of these placement).

## Conclusion

The privatization process in Serbia was intensified in the period from 2005 to 2009 with different objectives, including the reduction of the fiscal deficit. Thus, 851 SOEs were privatized using different methods of privatization. Privatization revenues were present by 2009, but the goal of reducing the fiscal deficit is not reached. The main reason for the failure in achieving this goal in Serbia is that the current spending enormously greater than the investment. The use of privatization revenues to finance current spending had a positive impact on the fiscal deficit. Our aim was to determine whether the privatization receipts were used for repayment of foreign debt or for the accumulation of foreign exchange reserves. The reduction of the external debt was only up to the third quarter of 2006, and then, despite the huge inflow of privatization proceeds until 2009, external debt still slightly increased, which suggests that privatization revenues were spent for this purpose. The movements in foreign exchange reserves recorded a constant growth during the inflow of privatization proceeds. Their movement clearly indicates some state savings from privatization revenues. The analysis and comparison of data before and after the privatization process reveals that the efforts towards reducing the fiscal deficit do not seem to have been achieved.

## References

- Barnett S. (2000). “Evidence on the Fiscal and Macroeconomic Impact of Privatization”. International Monetary Fund. Working Paper 130/00.
- Basic T. (2007). „Fiscal challenges in Serbia Today-What to do with privatization receipts“. National Bank of Serbia. . [http://www.nbs.rs/export/sites/default/internet/english/90/90\\_0/2007\\_6\\_TB\\_e.pdf](http://www.nbs.rs/export/sites/default/internet/english/90/90_0/2007_6_TB_e.pdf)
- Blais A., Kim J., Foucault M., 2010., “Public Spending, Public Deficits and Government Coalitions”, *Political Studies*, Vol 58, pp.829-846.
- Owyang M., Ramey V.A., Zubairy S.,2013., Are Government Spending Multipliers Greater During Periods of Slack? Evodence from 20<sup>th</sup> centry historical data, Working Paper 18769, <http://www.nber.org/papers/w18769>.
- Blanchard O., 2005., *Макроекономја, Мате, Загреб*.
- Carnot N., Koen V., Tissot B. (2011). *Economic Forecasting and Policy*, Palgrave Macmillan, New York.
- Dabla-Noris E., Brumby J., Kyobe A., Mills Z., Papageorgiou C., 2011.“Investing in Public Investment: An Index of Public Investment Efficiency”, IMF Working Paper WP/11/37.
- Davis, J., Ossowski, R., Richardson, T., Barnett, S. (2000). „Fiscal and Macroeconomic Impact of Privatization“. IMF Occasional Paper 194.
- Flangan M. (2008). „Resolving a Large Contigent Fiscal Liability: Eastern European Experiences“. International Monetary Fund. Working Paper WP/08/159.
- Hernandez-Cata E., 2004., Investment, Growth, and Budget Deficit Ceilings – *A Review of the Issues*, [www.g24.org/TGM/ehc0904.pdf](http://www.g24.org/TGM/ehc0904.pdf).
- International Monetary Fund, 2005. Public Investment and Fiscal Policy- Lessons from the Pilot Country Stydies, Fiscal Affairs Departmant, No. 04/105a.
- Johansen, S. (2002). „A small sample correction for the test of cointegration rank in the vector autoregressive model“. *Econometrica*, 70, pp. 1929-1961.
- Katsoulakos Y., Likoyanni E. (2002). “Fiscal and Other Macroeconomic Effects of Privatization”, *Fondazione Eni Enrico Mattei, Nora di Lavoro* 113.
- Klan, I. (2006). „Public vs. private sector: an examination of neo-liberal ideology“. Munich Personal RePEc Archive. MPRA Paper No. 13443.
- Leeper, E., Walker T., Shu-Chun S. Y., October 2010., “Government Investment and Fisca Stimulus”, IMF Working Paper No. WP/10/229.
- Lutkepohl, H. (2005). *New Introduction to Mutiple Time Series Analysis*, Springer-Verlag. Berlin.
- Mitrović, B. (2003). Dometi privatizacije u Srbiji . *Ekonomika*, 49(5-6), 54-62.
- Младеновић, З. Нојковић, А. (2005). *Анализа временских серија: примери из српске привреде*. Економски факултет. Београд.
- Newbold, P., Carlson W. L., Thorne, B. (2010). *Statistika za poslovanje i ekonomiju*. Zagreb. MATE.

- Parotid, R. (2007). “Fiscal Policy in Developing Countries: A Framework and Some Questions”. World Bank. Policy Research Working Paper 4365.
- Ramey V. A., (2009)., “Identifying Government Spending Shocks: It’s All in the Timing”, National Bureau of Economic Research, Cambridge, Working Paper 15464, <http://www.nber.org/papers/w15464>
- Rod K., Walker D.A., Hunt Ch. (2015). „Privatization and Fiscal Deficits in European Emerging Markets“. *Emerging Markets Finance and Trade*. Issue No: 52. (1). pp.: 1 - 10.
- Romer D., (2012)., *Advanced Macroeconomics*, McGraw-Hill, New York.
- Rosen H.S., Gayer T., (2010)., *Public Finance*, McGraw Hill, New York.
- Rubin, I., (2008)., *Public Budgeting: Policy, Process and Politics* (ASPA Classics), Hardcover.
- Yar A., Sarawak M., Arif-Affendy M. (2013). „Privatization and Fiscal Deficit: a Case Study of Pakistan”. *Research Journal of Finance and Accounting*. 4. (14). pp.1-10.

