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DOLLARIZATION IN MONTENEGRO: EVIDENCE AFTER TWO DECADES OF EXPERIENCE

Abstract:

Montenegro has started transition process from centrally planned to market oriented economy in late nineties of the XX century. Being still part of the Federal Republic of Yugoslavia, official currency was dinar in that period. Dinar, inherited currency from the Social Federal Republic of Yugoslavia, was not convertible currency (except for short period from 1990-1992), after which then actual monetary policy resulted in hyperinflation during 1992-1993. Afterword, although it was only legal tender until 1999, dinar was not used as currency in full capacity and in all transactions, but often replaced with Deutsche mark (DM), although unofficially. As result of such practice, in 1999, Montenegro introduced “double currency” regime, officially allowing use of both, dinar and DM as legal tenders. In November 2000, dollarization regime has officially become implemented in Montenegro, introducing DM and later EURO (since January 2002) as only legal tender in Montenegro. Two decades later, we may summarize effects of such choice, and see whether decision to implement dollarization instead to issue national currency (perper was the one which was proposed) or remain using dinar was appropriate. We will make comparisons of selected indicators with Serbia, as it has decided to use dinar as national currency. Although there are many differences between Montenegrin and Serbian economy, both have many elements in common, which make reasonable to make comparisons. In addition, we did empirical analysis and analyzed economic performance of European countries that belongs to different monetary regimes, for period from 2000-2016.

Keywords:

Dollarization, EURO, National currency

JEL Classification: E50, E00

Introduction

Dollarization is monetary regime chosen, in some forms, but at least 60 small countries or territories (Alesina & Barro, 2001). Expansion of the number of independent countries after the Second World Was led to increasing number of those who decided to move forward to currency unions or to apply dollarization. There are two types of dollarization: "Unofficial dollarization prevails when residents extensively use a foreign currency (in most cases the US-Dollar) alongside or instead of the domestic currency, and/or hold foreign currency notes or bank deposits to protect against high inflation in the domestic currency. Official dollarization occurs when a government adopts a foreign currency as the predominant or exclusive legal tender." (Maute, 2006)

Montenegro has become independent country since 2006, but has started transition process in late nineties of the XX century. During nineties, being still part of the Federal Republic of Yugoslavia and later the Union of Serbia and Montenegro, official currency was dinar. Dinar, also currency of the Social Federal Republic of Yugoslavia, experienced often instabilities, even hyperinflation during 1992-1993. Therefore, it was not used as currency in full capacity, but often replaced with German mark (DM), although unofficially.

As Serbia and Montenegro, although in weak federation, has managed economic transition process quite independently, Montenegro introduced "double currency" regime in 1999, officially allowing use of dinar and DM as legal tenders. Market made a choice and by the end of 2000, dinar was practically "evicted" from financial markets. In November 2000, the new Law on Central bank in Montenegro passed, introducing DM and later EURO (since January 2002) as only legal tender in Montenegro. That is when dollarization regime has officially become implemented in Montenegro. It is important to notice that Montenegro considered introduction of national currency (perper) and also currency board[1], but at the end, in order to maintain monetary stability, decided to incorporate official dollarization. DM and later EURO has been seen as rationale choice,

[1] One of the most commonly used definitions of the currency board is the one presented by economist Kurt Schuler (Hanke & Schuler, 1994), according to which the currency board is the way of regulating the monetary authority in a way that the money supply must be aligned with the offer of the other convertible currency or some selected goods (e.g. gold), which was selected as a base for fixing the supply of the national currency. The money supply created by the monetary authority in the situation of the currency board may consist of paper money and coins, as well as other reserves held by commercial banks. The basic features of the currency board are: Ensuring the credibility of monetary authorities in terms of controlling the supply of money; Guarantee full convertibility of the national currency; Balances of the Central Bank contain only liquid active components, unlike the balance of the Central Bank with national currency, where the domestic currency can be found on the assets side, usually in the form of state debts; Under the terms of the currency board, assets are usually at a higher level than liabilities, usually by 5-10%, in order to ensure complete currency stability and prevent the negative impact of unforeseen circumstances; There is a limitation of commercial banks in the part of the borrowing from the Central Bank; In the conditions of the currency board, there is no possibility of active monetary policy in terms of impact on interest rates and exchange rate through changes in money supply. Successful organization of the currency board is mainly determined by a quality institutional base and legal framework in the country in which the currency board is applied. Institutional adjustments are important for its successful implementation.

due to advantages coming from common currency area. Although Montenegro has not become member of European Monetary Union yet, certain advantages trough dollarization are visible. A key incentive to introduce European monetary union was to encourage economic integration among member countries, believing that such arrangement will be in favor of higher sustainable economic growth rates and further prospects. Rationale was found in Mundell's theory of optimum currency area (Mundell, 1961), according to which country that considers membership in currency union has to balance between economic stability loss (losing national monetary policy) against the monetary efficiency gain (competitiveness, price stability, etc.)[2]. The EMU has promoted price stability, exchange-rate stability, sound public finances, low interest rates, investment and trade and reaping full benefits of the EU's internal market.[3] Analyzing results of EMU, (Jager & Hafner, 2013) concluded that: "The economic stability loss from foregoing exchange rates and national monetary policy is greater than monetary efficiency gains, especially for European periphery countries." Drachal[4], discussing experience of Slovakia's adoption of Euro, stated that: "It may be that the current success of euro adoption lays rather in psychology than in the core facts and figures. Nevertheless it seems that more definite opinion about Slovakia's euro adoption should be made in a few more years after more trough studies".

Two decades later, we may summarize effects of such choice, and see whether decision to implement dollarization was a right choice. We will compare dynamics of key economic indicators (GDP growth, GDP per capita, FDI, Gross Investment, Savings, Unemployment, Export growth, Current account balance, Lending interest rate) between Montenegro and Serbia (as Serbia has decided to continue using dinar), but also we will make comparisons with Bosnia and Hercegovina as its monetary system is based on currency board regime, but also with European countries which belongs to EMU and those which use national currency. It is important to stress that monetary stability is not the only determinant that has impact to selected variables, but it is important one[5].

[2] (Jager & Hafner, 2013)

[3] http://ec.europa.eu/economy_finance/publications/pages/publication7309_en.pdf

[4] Drachal, K. (n.d.). *The Costs and Benefits of Euro Adoption in Slovakia.* Retrieved from cejsh.icm.edu.pl

[5] In Balkan, since separation from Yugoslavia (Socialist Federal republic of Yugoslavia, and Socialist Republic of Yugoslavia and the latest Union of Serbia and Montenegro), former member countries but new independent states Bosnia and Herzegovina, Serbia and Montenegro, has applied many similar institutional solutions, with one essential difference, all of them incorporated different monetary regimes. Bosnia and Herzegovina decided to introduce Currency Board, Serbia to retain own currency (dinar), while Montenegro implemented dollarization (introduced DM and then EURO as only legal tender). Each state had strong arguments and incentives for specific decision, achieving different results. FRY Macedonia decided to introduce new currency, as well as Slovenia and Croatia, both of which later joined EMU.

Literature review

Full official dollarization is type of monetary system where foreign currency has been used as only legal tender, and country does not have its own domestic currency. “It is considered as rational policy when following criteria were met: country is relatively small and highly import dependable, experienced hyperinflation, segniorage income is small due to already present informal dollarization, foreign currency reserves are sufficient to replace national currency with foreign.” (Fabris, Vukajlovic Grba, Radunovic, & Jankovic, 2004). According to (Alesina & Barro, 2001), “the countries that should be more likely to abandon their currencies are those that exhibit the following characteristics: a history of high and variable inflation, which we take as an indicator of a lack of domestic commitment ability; a large actual or potential volume of international trade, particularly with the anchor country; business cycles that covary substantially with potential anchor; reasonably stable relative prices (gauged by real exchange rates) with respect to a potential anchor”. They also concluded “proliferation of many small countries, the increasing volume of world commerce in goods and services and in financial exchanges, and the renewed emphasis on price stability are formidable forces leading toward dollarization”. As key advantages of dollarization, (Fabris, Vukajlovic Grba, Radunovic, & Jankovic, 2004) list: low inflation rate, lack of misconduct in monetary policy, lower interest rates, fostering local capital market, lower transaction costs in international transactions, easier integration of local companies into international market, foreign trade growth, higher fiscal discipline, elimination of exchange rate risk. As disadvantages, country loses its foreign currency reserves, does not have impact on exchange rate, monetary policy is limited, luck of seignorage income, targeted inflations instrument cannot be used, central bank does not have possibility to be the last instance creditor, initial administrative expenses are high (conversion, redefining of payment system and procedures), and, in case of balance of payment deficit, outflow of the currency.

Romer (2001) also emphasizes importance of independence of central bank in order to maintain monetary stability, e.g. low inflation rate. “The theories suggest that inflation is related to such variable as costs of inflation, policymaker’s ability to commit, their ability to establish reputation, and the extent to which policy is delegated to individuals who particularly dislike inflation. Al of these is hard to measure. Independence of the central bank is determinant that may influence low inflation policy, as individuals who dislike inflation may be delegation to govern monetary policy. “Investigations of the relation between measured of independence and inflation find that among industrialized countries, independence and inflation are strongly negatively related.” (Romer, 2001)

“Official dollarization is the closest relative to the currency board as it implies the same motivation and principle of importing the anchor's stability, and requires the same disciplined macroeconomic and structural policies. Accordingly, the strengths and weaknesses of dollarization equal those of a currency board, with the main difference

being the higher degree of irreversibility of the former. The gains of dollarization in terms of transparency, credibility, monetary stabilization, and impetus for fiscal discipline therefore are supposed to exceed those of a currency board." (Maute, 2006)

Inflation in Montenegro in period from 1992 to 1999 and introduction of double-currency regime and later DM/EURO in Montenegro

After dissolution of Socialist Federal Republic of Yugoslavia and declaration of independence by four republics, Slovenia, Croatia, Bosnia and Hercegovina and Macedonia, Serbia and Montenegro decided to remain in federal state, Socialist Republic of Yugoslavia. Official currency was dinar, currency inherited from the SFRY.

In 1993 and 1994 SRY experienced one of the highest ever seen hyperinflation, with CPI in 1993 of 150,282,416,580,735% and in 1994 of 106,480,341,001%. Although monetary authorities reacted in 1994, introducing "new dinar", hyperinflation was stopped but monetary stability was not. Inflation rate was two digits in all years from 1995 to 1999.

Table 1. Inflation in Montenegro in period from 1992-1999

Year	Consumer price index, previous year=100
1992	9,463.0
1993	150,282,416,580,735.0
1994	106,480,341,001.0
1995	181.2
1996	179.9
1997	122.8
1998	131.9
1999	167.2

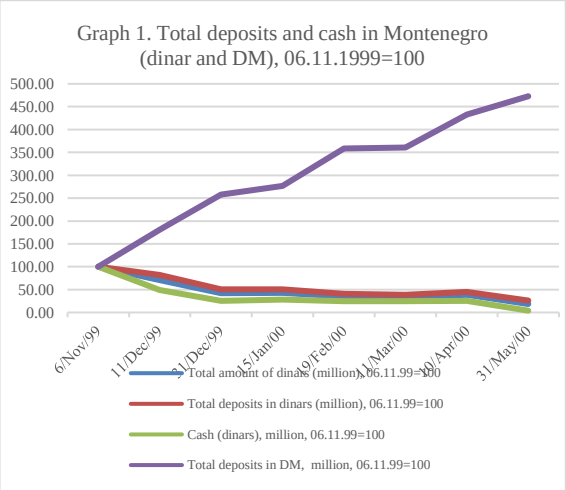
Source: Statisticki godisnjak Republike Crne Gore, 1997, 2000.

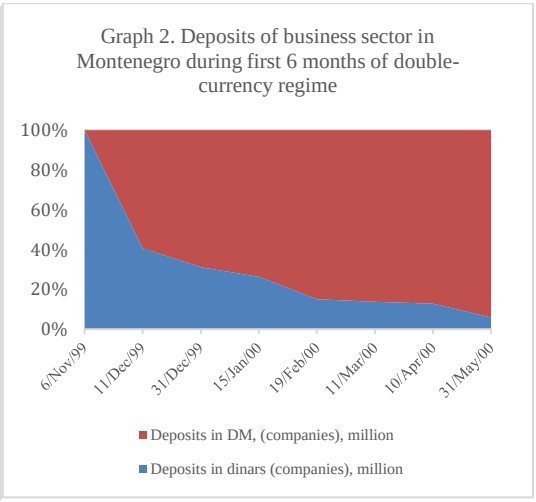
Economic transactors lost confidence in dinar and often used DM as tender, although unofficially.

As since 1998 Montenegro and Serbia has started implementations of separate economic reforms programs, establishing new monetary regime in Montenegro was one of top priorities. Three options were considered: official dollarization, currency board and new national currency (perper). After in depth analysis, dollarization was selected as optimal solution. Prior to it, double-currency regime was introduced in Montenegro

Double-currency regime in Montenegro was officially introduced on November 2, 1999, allowing use of both, DM and dinar as legal tenders. Since January 1, 2001, DM has become only legal tender, replaced by EURO since March 2002.

During the first six months of double-currency regime in Montenegro, it was obvious that all sectors prefer DM instead of dinar. In period from November 6, 1999 to May 31, 2000, value of deposits in DM increased by 372%, while deposits in dinar declined by 73.99%. Total amounts in cash in dinars declined by 96.11%.[6] Deposits of the companies (business sector) have confirmed it.[7]





By the end of the year (2000) almost none dinar was used in Montenegro, and therefore new Law on Central bank of Montenegro was adopted (in November 2000), introducing full official dollarization in Montenegro starting on January 1, 2001.

Data

We decided to use statistical data provided by international organizations only, in order to provide its reliability and compatibility. Therefore, we used data from the IMF (Outlook database, April 2018. Edition), World Economic Forum and World Bank. Al data were processed using Eviews 8. Edition.

All data are on annual level, and if expressed in currency, are expressed in current US$, or in constant 2010 US$. In order to make estimations, we estimated correlations among selected set of variables, but also LSQ estimates using panel data.

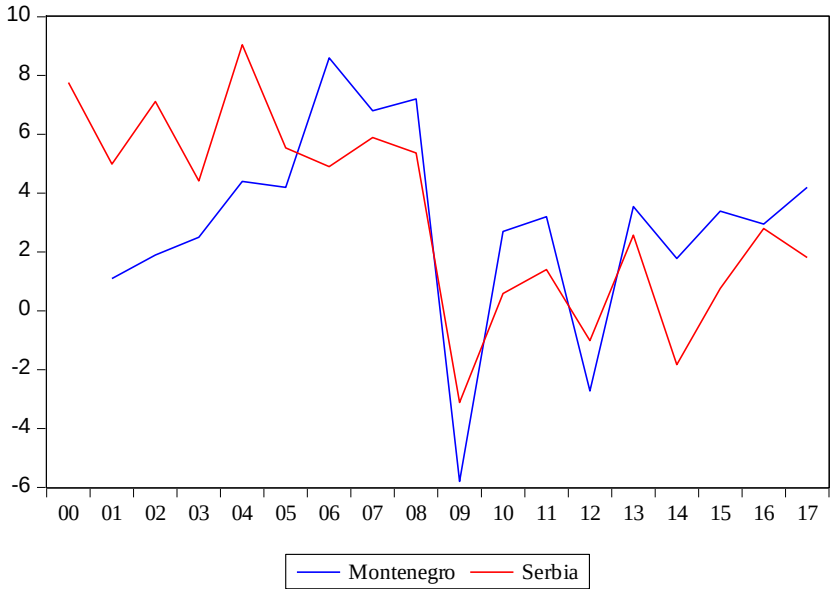
[6] Source of data: Vukotic, V. (2000). *Dvovalutni sistem u Crnoj Gori*, conference presentation. Milocer
[7] Source of data: Vukotic, V. (2000). *Dvovalutni sistem u Crnoj Gori*, conference presentation. Milocer

Empirical analysis

We will initially compare trend for period from 1999 to 2017 for two monetary territories: Montenegro (uses EURO as legal tender) and Serbia (uses dinar as official currency). Later, we will add Bosnia and Hercegovina into analysis, as it applies currency board, which was also considered as one of the options in Montenegro. In addition, we will compare all these countries with European monetary zone countries, as well with members of EU, which doesn't use EURO, but national currency instead.

Real GDP growth rates[8] in initial period were higher in Serbia, but since 2005[9] were higher in Montenegro. As Montenegro declared independence in 2006, full effects from "more liberalized" economic system have taken its effects. Both countries experienced recession in 2009 and 2012, while in Montenegro was higher as it was more exposed to international financial markets.

Graph 3. Annual percentages of constant price GDP, year-on-year change

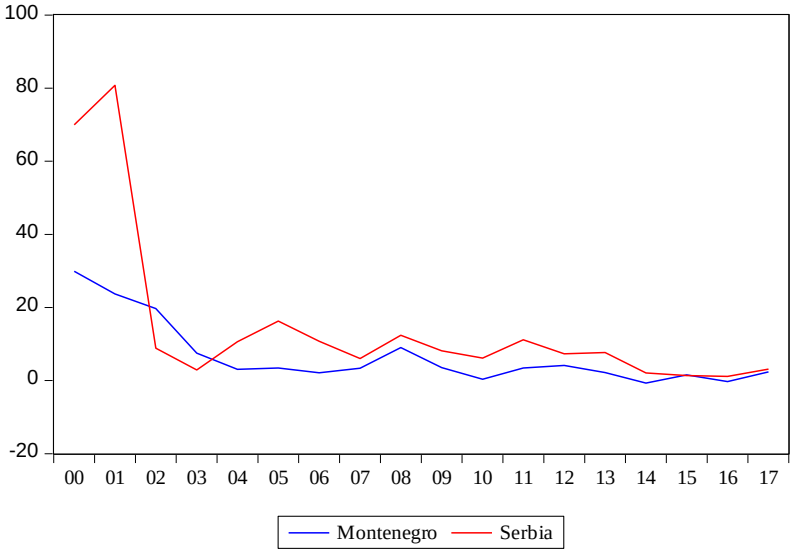


Inflation rate, except for 2002 and 2003 (expected higher inflation due to conversion in EURO), has been lower in Montenegro in entire period. High inflation rate in Serbia in 2000 (70%) and 2001 (80.7%) was one of the main arguments pro dollarization, as if Montenegro decided to use dinar, would experience the same price instability. 2002 was the last year when Montenegro experienced two digital inflation, while in Serbia, inflation was higher than 10% in 2004, 2005, 2006, 2008 and 2011.

[8] Source: IMF Outlook database, April 2018.

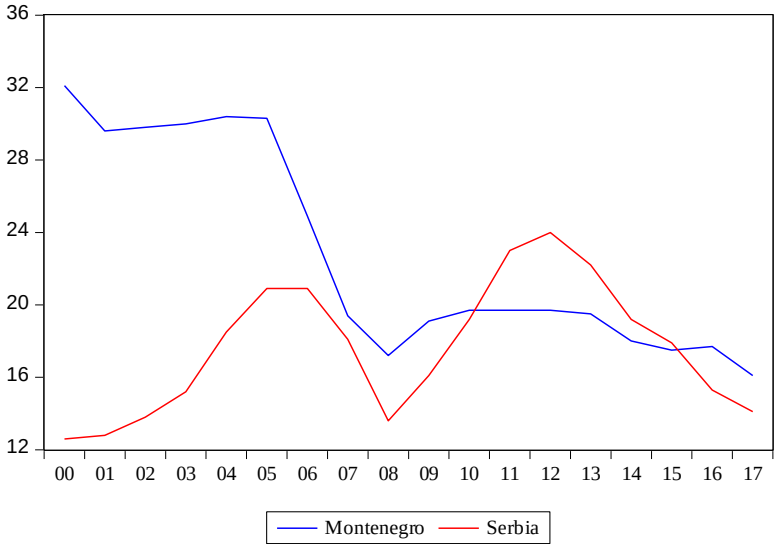
[9] 2006 is important year to start analysis from, as in May 2006. Montenegro declared independence, so Serbia and Montenegro both have become independent countries.

Graph 4. Inflation rate (Annual percentages of average consumer prices are year-on-year changes)



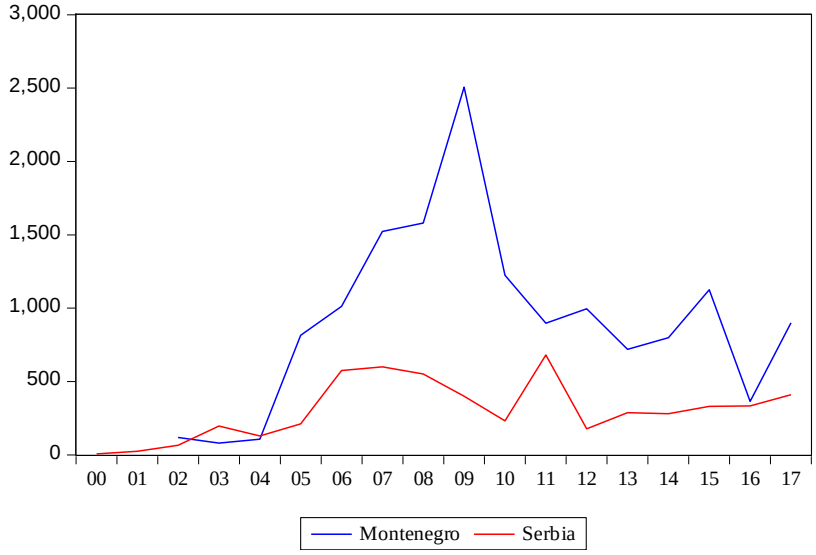
Unemployment rate, although significantly higher in Montenegro at the beginning of analyzed period, has declined in Montenegro since 2005 and has been lower than in Serbia for several years (2010-2015).

Graph 5. Unemployment rate



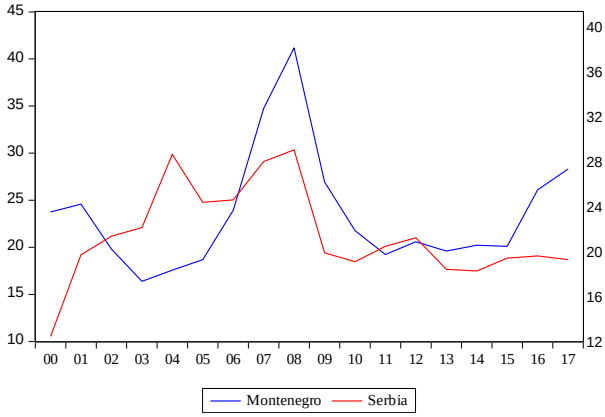
Monetary stability, among other determinants, influenced stronger investment activity in Montenegro compared to Serbia. Foreign direct investment inflow per capita was significantly higher in Montenegro than in Serbia, especially in initial years of independence. Average FDI per capita in period from 2002 to 2017 in Montenegro were 922 US$, while in Serbia 341.2 US$.

Graph 6. FDI per capita, US$

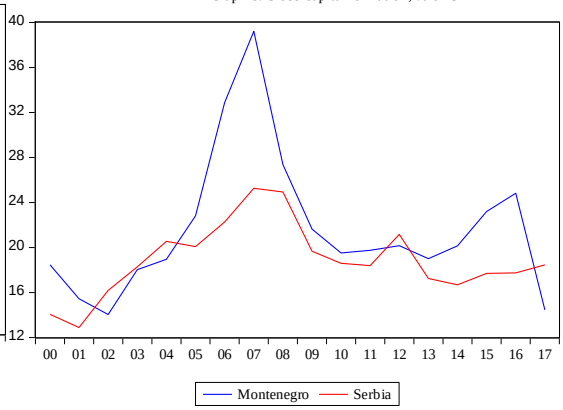


Gross investment (as % of GDP), has been higher in Montenegro since independence (2006), except in 2012. Gross capital formation also.

Graph 7. Gross investment, % of GDP



Graph 8. Gross capital formation, % of GDP



Current account deficit has been issue in Montenegro historically, as it is small, import dependent country. But deficit has become lower, due to growth in export of services.

Graph 9. Current Account Balance, % of GDP

Both Serbia and Montenegro has experienced periods of both, growth and decline in volume of export of good and services, but positive annual change is more frequent.

Graph 10. Growth in volume of export of goods and services

Model

To analyze impact from FDI inflow and Gross National Savings to unemployment, we estimated panel LSE model with fixed effects, using unemployment as dependent while FDI inflow per capita and Gross National Savings as independent variables:

$$Un = c + FDI_{pc} + GNS_{\%gdp} + \varepsilon,$$

With Un – unemployment rate, FDI_{pc}- FDI inflow per capita (current US$), $GNS_{\%gdp}$- Gross national Savings (% GDP).

Estimation output is:

UNEMPLOYMENT = 27.5968516312 - 0.00546079898432*FDIPERCAPITA - 0.58793508515*GROSSNATIONALSAVINGS + [CX=F, PER=F]

Showing that increase in FDI inflow per capita by 1% leads to reduction of unemployment rate by 0.005%, while growth of savings leads to decrease in unemployment by 0.58%.

Table 2. Panel data LS model (fixed effects), dependence of unemployment rate on FDI inflow per capita and Gross national savings (% of GDP)

Dependent Variable: UNEMPLOYMENT
Method: Panel Least Squares
Date: 03/05/19 Time: 13:11
Sample: 2000 2017
Periods included: 18
Cross-sections included: 2
Total panel (unbalanced) observations: 34

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	27.59685	3.048180	9.053551	0.0000
FDIPERCAPITA	-0.005461	0.002564	-2.129996	0.0528
GROSSNATIONALSAVINGS	-0.587935	0.284544	-2.066236	0.0593
Effects Specification				

Cross-section fixed (dummy variables)

Period fixed (dummy variables)

R-squared	0.763795	Mean dependent var	19.60000
Adjusted R-squared	0.400403	S.D. dependent var	4.902998
S.E. of regression	3.796571	Akaike info criterion	5.779957
Sum squared resid	187.3814	Schwarz criterion	6.722709
Log likelihood	-77.25926	Hannan-Quinn criter.	6.101462
F-statistic	2.101847	Durbin-Watson stat	1.100426
Prob(F-statistic)	0.086110		

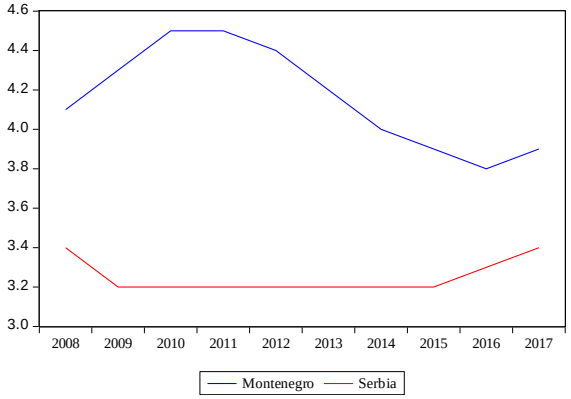
Competitiveness

In order to analyze other element than monetary stability important for variables we used in this research, we will compare some components of competitiveness, estimated by WEF[10]. We are limited to period from 2008 to 2017 (we will use 2018 data only for financial system), as data are not available for earlier period. [11]

Competitiveness of financial system is higher in Montenegro than in Serbia, since 2008[12]. As methodology has slightly changed in publishing reports since 2008, we may compare financial market sophistication indicator value in 2008. Montenegro was ranked as 35th in the world (5.0 value of indicator), while Serbia was 89th (3.9 value). In 2018, financial system in Montenegro was on 51th position, while in Serbia on 79th.

Quality of institutions is higher in Montenegro since 2008 than in Serbia. Also, except for 2017, Montenegro has maintained higher macroeconomic stability.

Graph 11. Quality of institutions



Graph 12. Macroeconomic stability

[10] World economic forum, Global competitiveness reports, 2008-2017

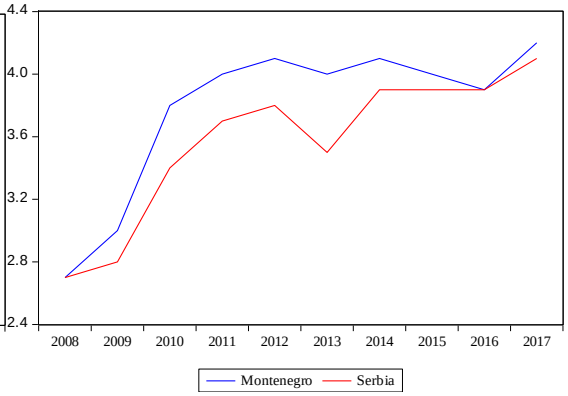
[11] Reference period is 2008-2017, as for Montenegro and Serbia 2008 is the first year when competitiveness indicators were produced for two independent countries.

[12] WEF, Global Competitiveness report for 2008 and 2018

Also, labor market efficiency is higher in Montenegro than in Serbia for entire period from 2008-2017, as well as quality of infrastructure and technological readiness.

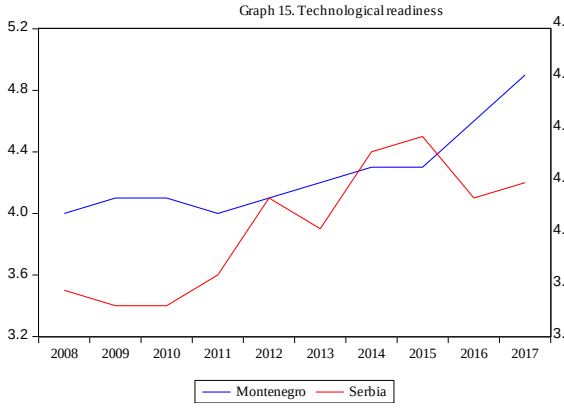
Graph 13. Labor market efficiency

Graph 14. Quality of infrastructure

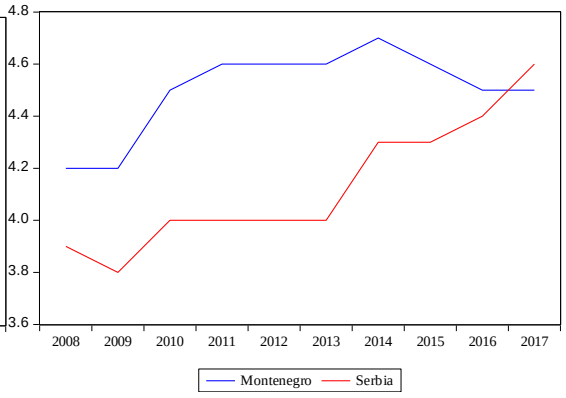


Montenegro has higher score of indicator of higher education and training, except for 2017, when Serbia achieved higher score. Technological readiness is also higher, except in 2014.

Graph 15. Technological readiness



Graph 16. Higher education and training/WEF indicator value



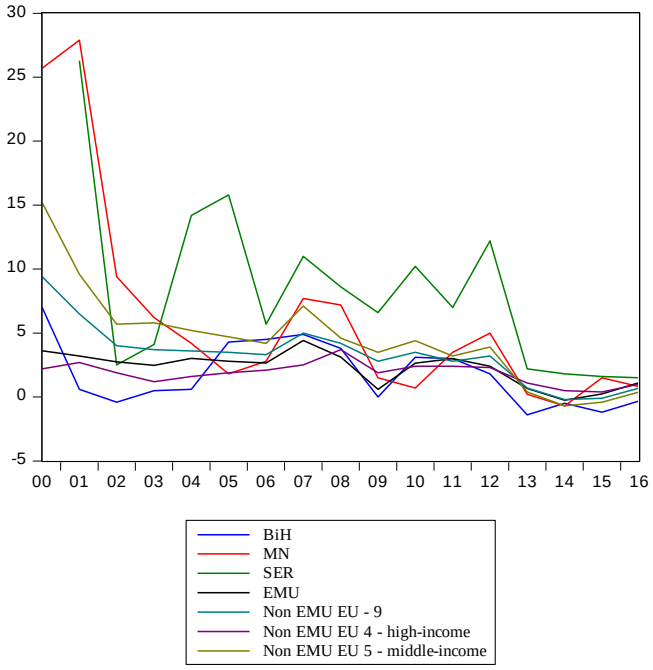
Economic performance under different monetary regimes – analysis for five groups of countries

Although type of monetary regime is not the only determinant of economic performance, it is important element. We conducted empirical analysis and analyzed economic performance of European countries that belongs to different monetary regimes, for period from 2000-2016. Those regimes are: membership in European monetary union (19 members), membership in EU but retaining national currency (9 countries, divided into

two categories: high income and middle-income country[13]), dollarization (Montenegro), currency board (Bosnia and Herzegovina) and non-EU membership with national currency (Serbia).

Study has shown that the lowest annual inflation rate[14] in period from 2000-2016 was evidenced in EMU area, 2.26%. In non-EMU countries, average inflation was 3.3%, of which in high-income countries 1.9% while in middle-income EU countries average annual inflation rate was 4.5%. In Bosnia and Herzegovina was 1.8%, in Montenegro 6.2% (if we exclude 2000-2001, as "adjustment period", the average inflation rate was 3.5%), while in Serbia was 14.3%. This leads to conclusion that EURO countries experienced lower average inflation.

Graph 17: Inflation rate



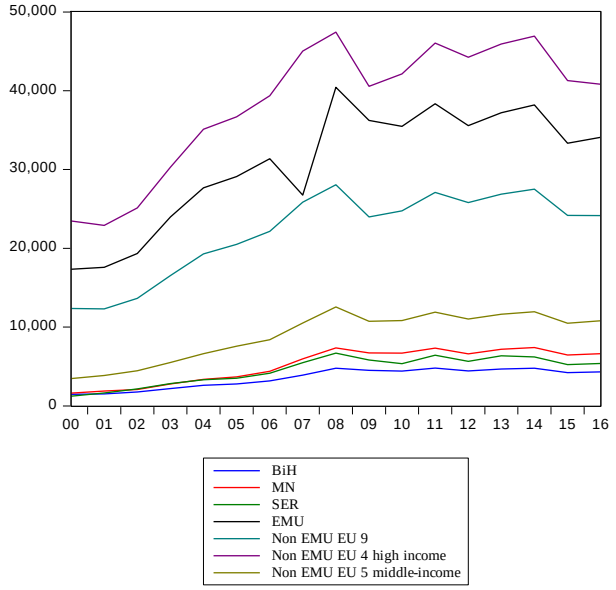
Source of data: IMF outlook database, October 2017.

The largest average GDP per capita (US$, current prices) was evidenced in 4 high-income EU non-EMU countries, 38,434.4 US$, while in EMU countries were 31,296 US$. In middle-income non EMU EU countries, average GDP per capita was 8,960.9 US$, while in three Balkan countries was 4,429.1 US$, of which the largest in Montenegro (5,183.1 US$).

[13] High income: Czech Republic, Denmark, Sweden and United Kingdom, middle-income: Bulgaria, Croatia, Hungary, Poland and Romania. We will use in this research term for this group: "non EMU high income EU countries" and "non EMU middle-income EU countries"

[14] Annual percentages of end of period consumer prices are year-on-year changes, source of data: IMF Outlook database, October 2017.

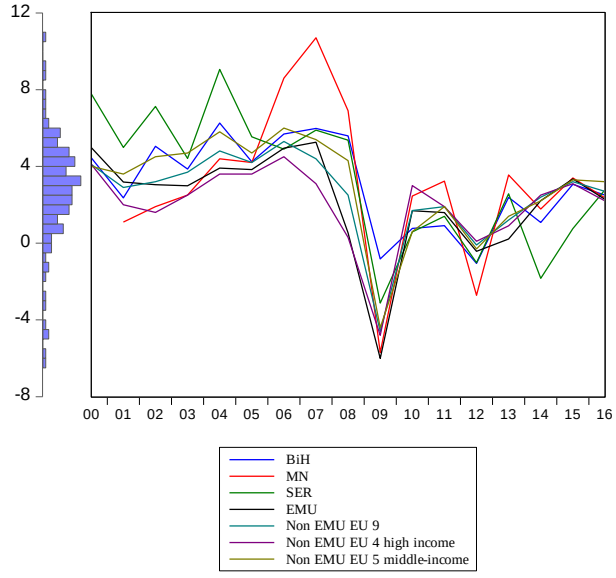
Graph 18: GDP per capita, US$, current prices



Source of data: IMF outlook database, October 2017.

Economic growth rates also vary among selected countries, but not significantly. In EMU countries, average real GDP growth rate for reference period was 2.2%, while in non EMU EU countries was 2.6%, of which in high-income countries 2.0% and in middle-income countries 3.0%. In selected Balkan countries was 3.16% (BiH 3.08%, Montenegro 3.04% and Serbia 3.36%).

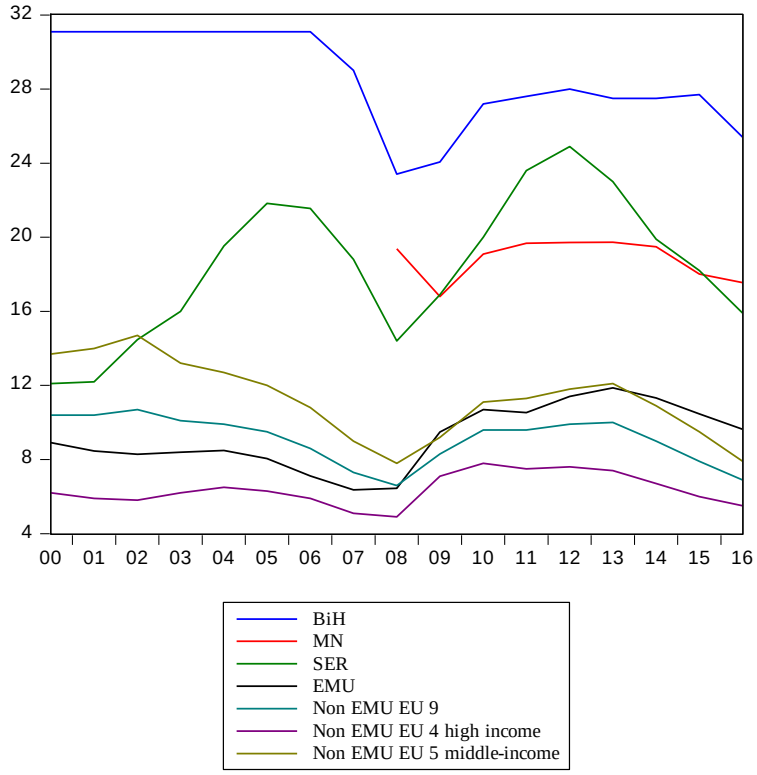
Graph 19. GDP real growth rates



Source of data: IMF Outlook data, October 2017.

Unemployment rate also varies among group of countries, being the lowest in 16-years average in non EMU EU high-income countries, 6.4%, while in EMU countries was 9.18%. The largest average unemployment rate was evidenced in Bosnia and Herzegovina, 28.5% over the entire analyzed period, while in Montenegro and Serbia was almost identical (18.7 and 18.4%, respectively). In non EMU EU middle income countries, average unemployment rate was 11.3%.

Graph 20. Unemployment rate

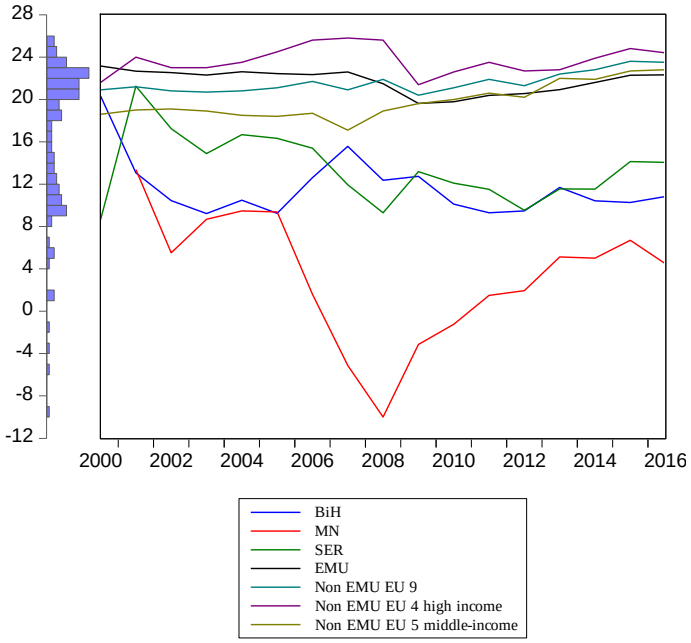


Source of data: IMF Outlook database, October 2017.

General government total expenditures, measured as share of GDP, were high in all analyzed countries. The highest average share of GDP was evidenced in Bosnia and Herzegovina, 47.2%, followed by non-EMU high-income countries, 46.7%, while in EMU countries was 44.7%. In non-EMU middle-income countries, government expenditures were 41.7% of GDP, while in selected Balkan countries in average were 44.3%.

Gross national savings was the largest for selected period in non EMU 4 high-income countries, in average 23.8%, while in EMU countries was 21.7%. In non EMU EU middle-income countries was 19.8%, while in three Balkan countries was 9.48%, of which the lowest in Montenegro, 3.3%.

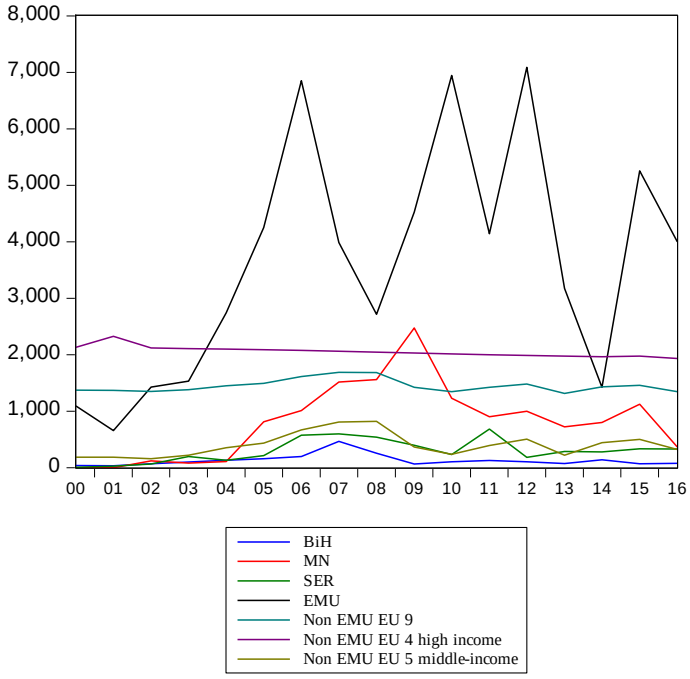
Graph 21. Gross National Savings, % of GDP



Source of data: IMF Outlook data, October 2017.

Large difference was evidenced in FDI inflow per capita. In Balkan countries, the average FDI inflow per capita was 412 US$, of which the highest in Montenegro, 812 US$ (BiH 128 US$ and Serbia 297 US$). Meanwhile, in EMU countries average FDI inflow per capita was 3,634 US$, while in non EMU EU middle-income countries was 5,350 US$ and high-income countries 2,040 US$.

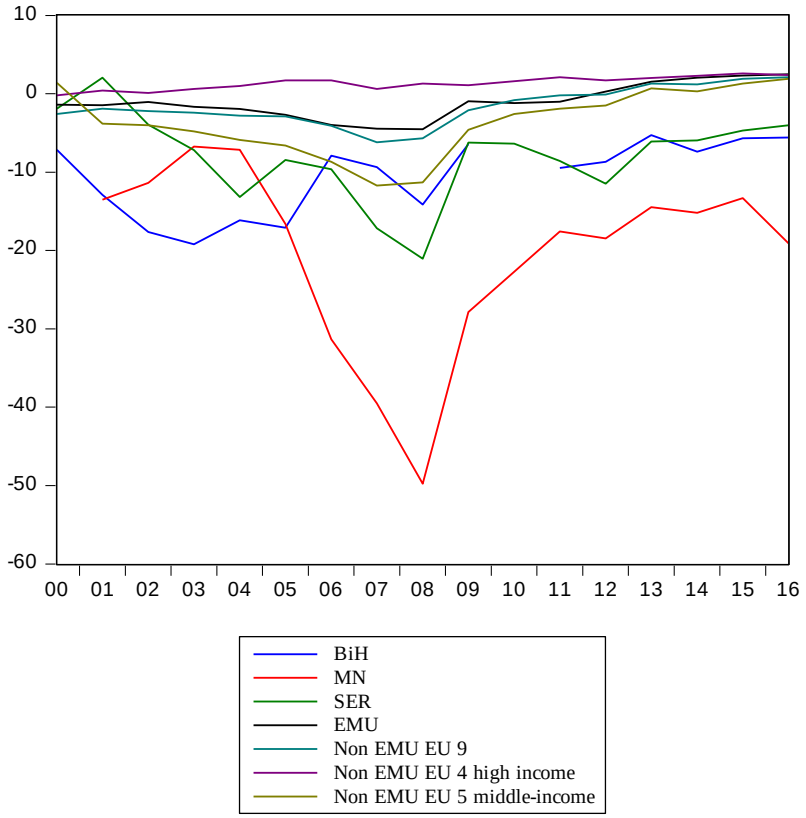
Graph 22. FDI per capita



Source: UNCTAD

Current Account balance was in highest surplus in non EMU EU 4 high-income countries, 1.4% average over the period from 2000-2016. In EMU countries was negative, -1.04%, while in non EMU EU 5 middle-income countries was negative, -4%. In Balkan countries, the largest deficit in average has Montenegro, -20.3%, while in Bosnia and Herzegovina was -10.36% and in Serbia -7.88%.

Graph 23. Current Account Balance, % of GDP



Source of data: IMF Outlook database, October 2017.

Growth of export of goods and services was the highest (average 16 years) in Serbia, 11.49%, followed by non-EMU middle-income countries, 7.4%. In high-income non-EMU countries was 5%, while in EMU countries 5.2%. In Montenegro was 3.4%, while in Bosnia and Herzegovina 3.8%. This leads to conclusion that export has grown faster in non-euro countries (graph 9).

Estimation of impact of export growth to GDP per capita growth, using panel LS (none effects), shows strong impact, growth in export of good and services by 1% will lead to GDP real growth by 0.29%. This leads to conclusion that, from export perspective and GDP real growth, non-EMU countries will benefit (table 3).

Table 3. LS model, dependence of GDP real growth rate on export growth

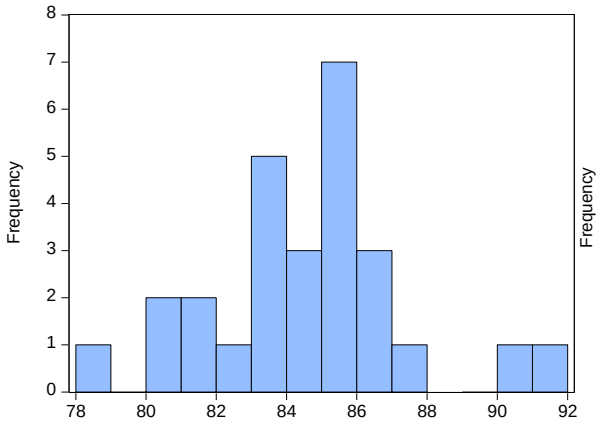
Dependent Variable: GDPREALGROWTH
Method: Panel Least Squares
Date: 04/02/18 Time: 12:34
Sample: 2000 2016
Periods included: 17
Cross-sections included: 7
Total panel (unbalanced) observations: 115

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXPORTGROWTH	0.294367	0.023119	12.73271	0.0000

R-squared	0.189500	Mean dependent var	2.726348
Adjusted R-squared	0.189500	S.D. dependent var	2.790199
S.E. of regression	2.511955	Akaike info criterion	4.688657
Sum squared resid	719.3306	Schwarz criterion	4.712526
Log likelihood	-268.5978	Hannan-Quinn criter.	4.698346
Durbin-Watson stat	1.474535		

Economic freedoms and monetary freedom. Although monetary freedom level is high in all analyzed countries, economic freedom index is not. It ranges from 55.0 to 80.0 among analyzed countries (graphs 24-25). Estimating correlations among GDP per capita and monetary and economic freedom index, we have seen that economic freedom index is more correlated to GDP per capita than monetary freedom index, which was expected as all countries have high level of monetary freedom (table 4).

Graph 24. Monetary freedom distribution



Graph 25. Economic freedom index distribution

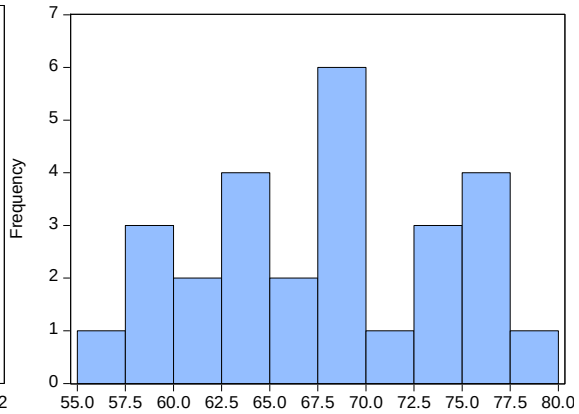


Table 4. Correlation coefficients

	Monetary Freedom	Economic Freedom	GDP per capita US$
Monetary Freedom	1.000000	0.544835	0.228876
Economic Freedom	0.544835	1.000000	0.491456
GDP per capita US$	0.228876	0.491456	1.000000

Analysis of **correlation coefficient among key economic indicators** using panel data (7 group of countries, total of 31 economy), has shown that there is strong negative correlation between inflation and GDP per capita (-0.31), confirming hypothesis that monetary stability is important for economic growth. Inflation has also relatively high negative impact on FDI per capita (-0.21), which is important knowing that there is very strong correlation between FDI inflows per capita and GDP per capita, 0.70. Strong positive correlation is estimates also between current account balance and GDP per capita (0.58). FDI inflow per capita and current account balance have strong impact on unemployment as well. Gross national savings is also highly positively correlated with GDP per capita (0.64), but also with decrease in unemployment (-0.71). Correlation between gross national savings and currency account balance is also very strong (0.89). GDP real growth is highly correlated with export growth (0.63). (Table 5)

Table 5. Correlation coefficients

	GDP per capita current US$	GDP real growth	Unemployment	Current Account Balance	Export growth	FDI per capita US$	Government Expenditures, % of GDP	Gross National Savings	Inflation
GDP per capita current US$	1.00	-0.23	-0.73	0.58	-0.14	**0.70**	0.22	**0.64**	**-0.31**
GDP real growth	-0.23	1.00	0.10	-0.16	0.63	-0.17	-0.32	0.05	0.27
Unemployment	-0.73	0.10	1.00	**-0.59**	0.05	**-0.51**	0.25	**-0.71**	0.06
Current Account Balance	0.58	-0.16	-0.59	1.00	0.10	0.29	-0.26	0.89	-0.13
Export growth	-0.14	0.63	0.05	0.10	1.00	-0.13	-0.28	0.14	0.09
FDI per capita US$	0.70	-0.17	-0.51	0.29	-0.13	1.00	0.20	0.35	-0.21
Government Expenditures, % of GDP	0.22	-0.32	0.25	-0.26	-0.28	0.20	1.00	-0.27	-0.43
Gross National Savings	0.64	0.05	-0.71	0.89	0.14	0.35	-0.27	1.00	-0.04
Inflation	-0.31	0.27	0.06	-0.13	0.09	-0.21	-0.43	**-0.04**	1.00

If we estimate correlation coefficient only for selected Balkan countries, assuming that different stage in development would imply different importance of sources of growth, we

saw that value of coefficient is very similar to those estimated for group of 31 countries. (Table 6).

Table 6. Correlation coefficients for selected Balkan countries

	FDI per capita US$	GDP per capita US$	Government exp, % of GDP	Inflation	Unemployment
FDI per capita US$	1.00	0.65	0.27	-0.15	-0.36
GDP per capita US$	0.65	1.00	0.20	-0.33	-0.36
Government exp, % of GDP	0.27	0.20	1.00	-0.62	0.51
Inflation	-0.15	-0.33	-0.62	1.00	-0.37
Unemployment	-0.36	-0.36	0.51	-0.37	1.00

Conclusion

Our analysis has shown that Montenegro has benefited from dollarization. Trough dollarization, monetary stability was provided, which also has made Montenegro more attractive for foreign investment. Being small open economy, with limited production potentials, competitiveness on both, financial and goods international markets is extremely important for the country. Using EURO as legal tender also reduced transaction costs and operations in international transactions.

Further analysis on wider group of countries has shown that using EURO as official currency has benefits for EMU members, but also has shown that, if country can maintain monetary stability using national currency, this has positive impact on employment and export growth.

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