MPRA

Munich Personal RePEc Archive

Macroeconomic analysis of trade in some CEE countries

Josheski, Dushko and Lazarov, Darko

Goce Delcev University-Stip

07. July 2011

Macroeconomic analysis of trade in some CEE countries

Dushko Josheski [1]

Goce Delcev University-Stip

Darko Lazarov[2]

Goce Delcev University-Stip

[1] dusko.josevski@ugd.edu.mk

[2] darko.lazarov@ugd.edu.mk

Abstract

The research in this paper is focus on macroeconomic analysis of trade and other relevant indicator for real economy such as government net debt, exchange rate, interest rate, and especially the correlation between trade and growth. Today is widely accepted that openness of counties have important role for economic performance, therefore the investigation of trade is challenge for economists of small developing countries. The mail goal in this paper is theoretical analysis of some macroeconomic indicator as a factor of growth and empirical investigation of trade in some CEE countries.

Key words: Macroeconomics, CEE countries, trade, exchange rate, PPP, inflation

Government net debt

When a government spends more that it collects as public revenue, it must borrow from the private sector to finance the budget deficit. The accumulation of past borrowing is the government debt. Government debt has negative effects for real economy. First, government budget deficit reduces national saving; it often leads to a trade deficit, which is financed by borrowing from abroad. Also, budget deficit by reducing national saving affects interest rate to increase and domestic investment to decrease.

The most important thing when government borrows from abroad to finance budget deficit is the confidence. Experience shows that some countries in specific time period had a problem with financing its debt (Argentina, Mexico and some counties of East Asia), and today we are witnessing the threat of insolvency situation when the state is unable to finance its debt (Greece).

Exchange Rates

There are two exchange rates: the nominal exchange rate and the real exchange rate. **The nominal exchange rate** is the relative price of the currency of two countries. For example, if the exchange rate between the Macedonian denar and the European euro is 60 denars per euro, Macedonian who wants to get Euros would pay 60 denars for each euro he bought. A European who wants to obtain denars would pay 60 denars for each euro they paid. When people refer to "the exchange rate'' between two countries, they usually mean the nominal

exchange rate. The **real exchange rate** is the relative price of the goods of two countries. That is, the real exchange rate tells us the rate at which we can trade the goods and services of one country for the goods and services of another country. We can see the relation between the real and nominal exchange rates, with consideration that many counties produced single goods. Suppose a European good costs 1000 Euros and similar Macedonian good costs 120.000 denars. To compare the prices of the two goods, we must convert them into a common currency. If a euro is worth 60 denars, then the European good costs 60.000 denars. Comparing the price of the European good (60.000 denars) and the price of the Macedonian good (120.000 denars), we conclude that the European good costs one-half of what the Macedonian costs. In other words, at current prices, we can exchange two European goods for one Macedonian good.

The real exchange rate is related to net exports. When the real exchange rate is lower, domestic goods are less expensive relative to foreign goods, and net exports are greater, but when the real exchange rate is higher, domestic goods are more expensive to foreign goods, and net exports are lesser.

Nominal exchange rate and inflation

The nominal exchange rate depends on the real exchange rate and the price levels in the two countries. I n addition we present this statement with equation, where

$$e = \varepsilon \cdot (P^* / P)_3 \tag{1}$$

If we take logs and differentiate previous equation:

$$\log e = \log \varepsilon + \log P^* - \log P \Rightarrow$$

$$\frac{d \log e}{dt} = \frac{d \log \varepsilon}{dt} + \frac{d \log P^*}{dt} - \frac{d \log P}{dt} \Rightarrow$$

$$\% \Delta e = \% \Delta \varepsilon + \% \Delta P^* - \% \Delta P \tag{2}$$

$$\% \Delta e = \% \Delta \varepsilon + (\pi^* - \pi) \tag{3}$$

This equation states that the percentage change in the nominal exchange rate between the currencies of two countries equals the percentage change in the real exchange rate plus the difference in their inflation rates. *If Macedonia has a high rate of inflation relative to the*

---

[3] e is nominal exchange rate, ε is real exchange rate, P^*/P the price levels in the two countries.

European Union, a euro will buy an increasing amount of Macedonian denar over time. If a Macedonia has a low rate of inflation relative to the European Union, a euro will buy a decreasing amount of the denar over time.

Purchasing-Power Parity - PPP$

A famous hypothesis in economics, called ***the law of one price***, states that the same good cannot sell for different prices in different locations at the same time. For example, if a corn sold for less in Belgrade than in Skopje, it would be profitable to buy corn in Belgrade and then sell it in Skopje. Some arbitrageurs would take advantage of such an opportunity and, thereby, would increase the demand for corn in Belgrade and increase the supply in Skopje. This would drive the price up in Belgrade and down in Skopje-thereby ensuring that prices are equalized in the two markets.

The law of one price applied to the international marketplace is called **purchasing-power parity**. It states that if international arbitrage is possible, then a dollar (or any other currency) must have the same purchasing power in every country. The argument goes as follows. If a denar could buy more corn domestically than abroad, there would be opportunities to profit by buying corn domestically and selling it abroad. Profit-seeking arbitrageurs would drive up the domestic price of corn relative to the foreign price. Similarly, if a denar could buy more corn abroad than domestically, the arbitrageurs would buy corn abroad and sell it domestically, driving down the domestic price relative to the foreign price. Thus, profit-seeking by international arbitrageurs causes corn prices to be the same in all countries

Trade and Growth

The results of empirical investigation show that there is strong correlation between trade and growth. Especially, small developing counties such as Macedonia with small markets are forced to base its growth by promoting trade activities. But, on the other hand, these counties faced with problem of non competitiveness. Therefore, countries that aspire to growth in the long run, must do reconstruction of own industries and economy as a whole.

It is now widely accepted that growth prospects for developing countries are greatly enhanced through an outer-oriented trade regime and fairly uniform incentives (primarily through the exchange rate) for production across exporting and import-competing goods. It is generally believed that import substitution at a minimum outlived its usefulness and that liberalization of trade and payments is crucial for both industrialization and economic development.

1. Empirical overview of some variables of Central and Eastern European countries including Macedonia with a specific reference to Trade

The data we are going to use in our overview are gathered from official sources WB (WORLD BANK)[4] and IMF [5] (world economic outlook) .Our sample consists of 14 countries[6] (we excluded Kosovo from our analysis ; due to a lack of data from official sources on this country).Data range from 1990-2011 covering 21 years. Next we are giving a list of variables we are going to us in our analysis.

a) Variables description (Table 1.1)

GDPG	Annual percentage growth rate of GDP at market prices based on constant local currency. Aggregates are based on constant 2000 U.S. dollars. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources.
GDPPPP	PPP GDP is gross domestic product converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power over GDP as the U.S. dollar has in the United States. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in current international dollars.
PPP	Purchasing power parity conversion factor is the number of units of a country's currency required to buy the same amounts of goods and services in the domestic market as U.S. dollar would buy in the United States. This conversion factor is for GDP.

---

[4] http://data.worldbank.org/

[5] http://www.imf.org/external/pubs/ft/weo/2010/02/index.htm

[6] **Albania,Bosnia and Herzegovina, Bulgaria,Croatia,Estonia,Hungary,Latvia,Lithuania,Former Yugoslav Republic of Macedonia,Montenegro,Poland,Romania,Serbia,Turkey**

INF	Inflation, average consumer prices Index, 2000=100
GOVND	General government net debt(% of GDP) Net debt comprises the stock (at year-end) of all government gross liabilities (both to residents and nonresidents) minus all government assets (domestic as well as foreign). To avoid double counting, the data are based on a consolidated account (eliminating liabilities andassets between components of the government, such as budgetary units and social security funds). General government should reflect a consolidated account of central government plus state, provincial, or local governments. Debt data are not always comparable across countries.
CAB-	Current account balance(% of GDP)- Current account balance is the sum of net exports of goods, services, net income, and net current transfers. Data are in current U.S. dollars.
UNEM-	Unemployment rate
ER-	Official exchange rate refers to the exchange rate determined by national authorities or to the rate determined in the legally sanctioned exchange market. It is calculated as an annual average based on monthly averages (local currency units relative to the U.S. dollar
IR	Real interest rate is the lending interest rate adjusted for inflation as measured by the GDP deflator.
TRADE	**T**rade is the sum of exports and imports of goods and services measured as a share of gross domestic product.

b) GDPG and Trade

GDPG is annual growth of GDP at constant market prices in constant 2000 US dollars. Next we are going to present ranking of countries based on their growth of GDP per capita. Because it is well established empirical relation of Growth of GDP per capita and Trade, we will scatter them in Mfit, to se interrelation between these two variables and also we will present correlation coefficient between the two variables. Trade is growth promoting; this notion is present in the economic theory since David Ricardo's theory of comparative advantages. Now, we will present the results from our sample of countries. **T**rade is the sum of exports and imports of goods and services measured as a share of gross domestic product.

Table 1.2

COUNTRY	GDPG
CROATIA	21,20903
BIH	9,781602
TURKEY	3,526683
POLAND	3,358282
ALBANIA	2,810698
MONTHENEGRO	1,509091
ESTONIA	1,46974
HUNGARY	1,229998
ROMANIA	1,032555
BULGARIA	0,994663
LITHUANIA	0,783575
MACEDONIA	0,595472
LATVIA	0,574953
SERBIA	-0,62276

In table 1.2 are presented country rankings in our sample on a basis of their annual GDP growth. Here we used average values for the period 1990-2011, so this are mean values of countries annual growth per capita. In the sample period only Serbia have negative mean value of economic growth. Macedonia is very low on the list 11-th place with 0, 5954 percentage of annual per capita growth for the period 1990-2011.

Estimated correlation matrix for GDP growth and Trade as % of GDP [7]

```
  Estimated Correlation Matrix of Variables

****************************************************************

            GDPG      TRADE

 GDPG       1.0000    .014510

 TRADE      .014510   1.0000

****************************************************************
```

This correlation matrix shows positive correlation coefficient between Trade as percent of GDP for the sample of countries and Growth of GDP. Although, correlation coefficient is relatively small still it is positive which is consistent with *apriori* knowledge.

[7] Data used for estimation of this correlation matrix are average values for the two variables for the all countries in sample.

Scatter plot of Trade as % to GDP and GDP growth rate
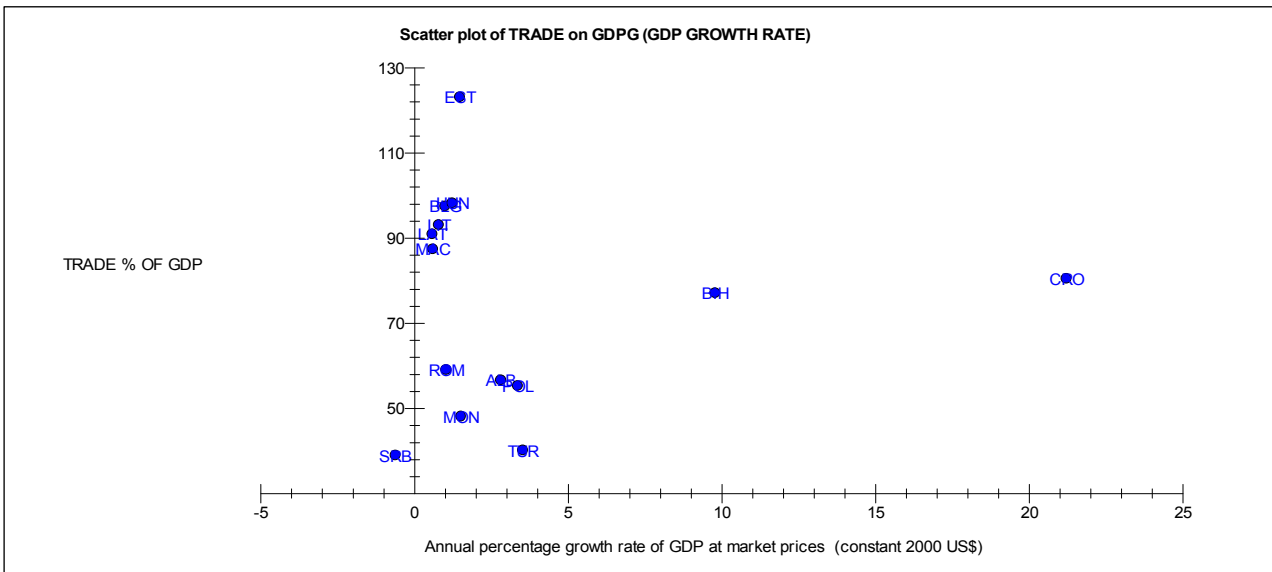
From the scatter plot it is evident that Croatia on average has highest GDP growth per capita in the last 22 years, while Estonia has highest Trade as percentage of GDP. Macedonia as it can be seen from the scatter with relation to these two variables is close to Lithuania and Latvia, Bosnia, and Hungary.

c) **GDPPPP**

PPP GDP is gross domestic product converted to international dollars using purchasing power parity rates. This is used for a comparison of living standards between the countries in our sample.
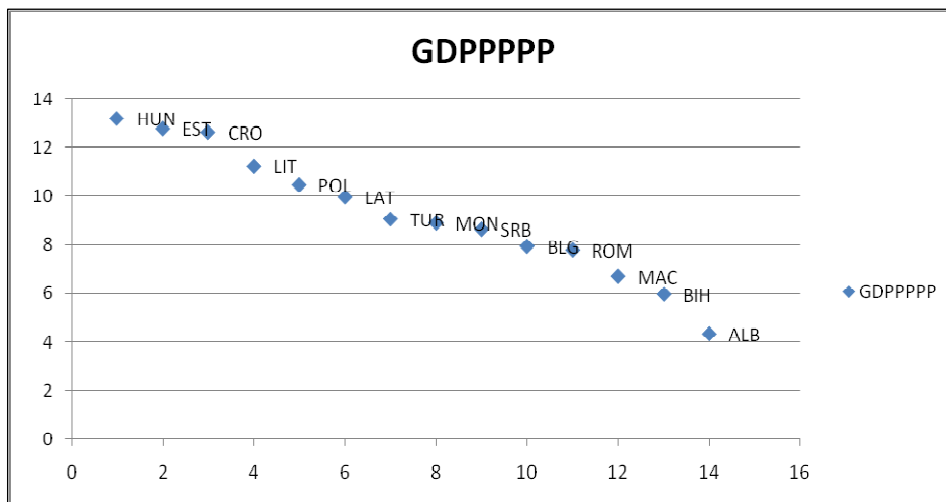
Table 1.3 Country rankings based on GDP (PPP)

RANKING	country	GDPPPPP
1	HUNGARIA	13,21158
2	ESTONIA	12,79242
3	CROATIA	12,64325
4	LITHUANIA	11,23602
5	POLAND	10,47641
6	LATVIA	9,96675
7	TURKEY	9,064365
8	MONTENEGRO	8,898103
9	SERBIA	8,638607
10	BULGARIA	7,935897
11	ROMANIA	7,782361
12	MACEDONIA	6,705468
13	BIH	5,959153
14	ALBANIA	4,32412

According to Table 1.3 highest living standards based on GDPPPP , in our sample has Hungary which is followed by Estonia, from the Balkan countries Croatia has highest living standard according to this indicator , while at the bottom in this group are Macedonia, Bosnia, and Albania respectively.

Estimated correlation matrix of GDPPPP and Trade as % GDP

```
 Estimated Correlation Matrix of Variables

***********************************************************

            GDPPPPP    TRADE

 GDPPPPP      1.0000    .52079

 TRADE        .52079    1.0000

***********************************************************
```

This correlation matrix shows that trade and GDP based on PPP are correlated with medium correlation of 0.52079, which is important that is positive.

d) PPP

Purchasing power parity conversion factor is the number of units of a country's currency required to buy the same amounts of goods and services in the domestic market as U.S. dollar would buy in the United States. This conversion factor is for GDP. Table 1.3 PPP

OBS	COUNTRY	PPP	TRADE
1	ALB	37,95655	56,62061
2	BIH	0,753714	77,11888
3	BLG	0,415864	97,51677
4	EST	7,100526	123,1373
5	HUN	98,55545	98,20598
6	LAT	0,27415	90,95152
7	LIT	1,38045	93,09437
8	MAC	16,85971	87,42893
9	MON	0,393818	48,12252
10	POL	1,4722	55,29973
11	ROM	0,840091	59,07675
12	SRB	27,49033	38,95737
13	TUR	0,4955	40,15636
14	CRO	3,44465	80,47098

From the scatter bellow Hungary has highest PPP from the group of countries.
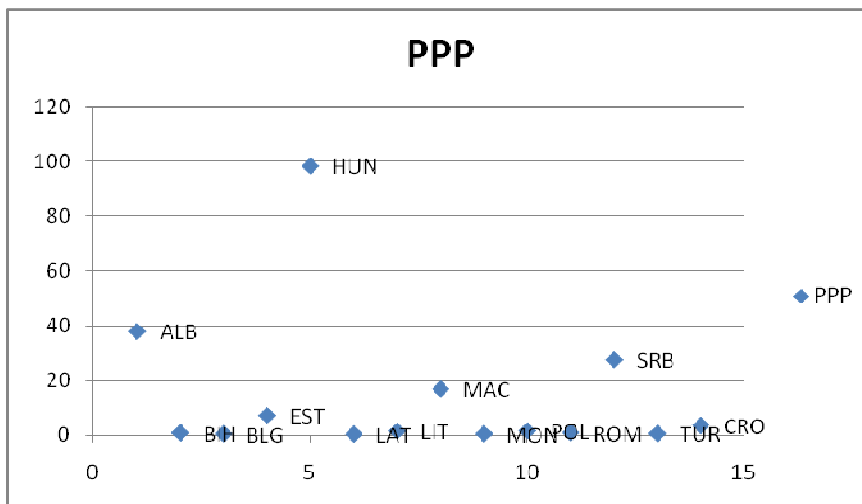
e) **Official exchange rate (ER)**

Official exchange rate refers to the exchange rate determined by national authorities or to the rate determined in the legally sanctioned exchange market. It is calculated as an annual average based on monthly averages (local currency units relative to the U.S. dollar

Table 1.3 ER

OBS	COUNTRY	ER	TRADE
1	ALB	113,5565	56,62061
2	BIH	1,717552	77,11888
3	BLG	1,132386	97,51677
4	EST	13,42919	123,1373
5	HUN	177,6175	98,20598
6	LAT	0,577522	90,95152
7	LIT	3,361337	93,09437
8	MAC	51,27994	87,42893
9	MON	0,875446	48,12252
10	POL	2,888393	55,29973
11	ROM	1,63134	59,07675
12	SRB	48,84049	38,95737
13	TUR	0,667043	40,15636
14	CRO	5,818985	80,47098

Scatter below resents the average values (1990-2011) for the exchange rate of 14 countries in the sample.
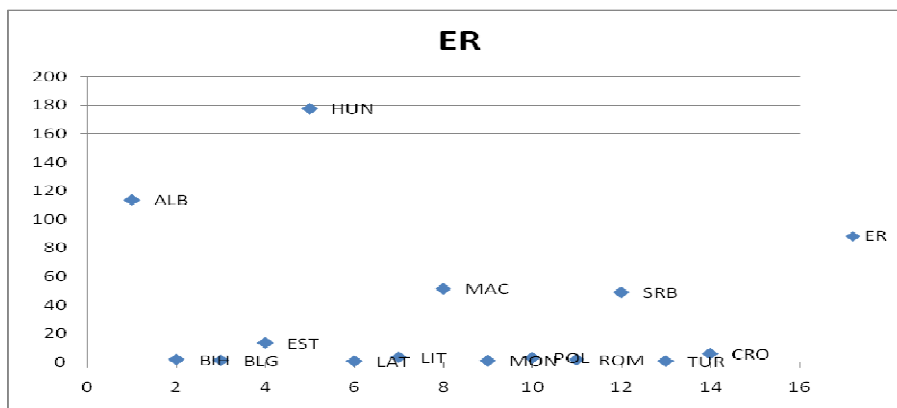
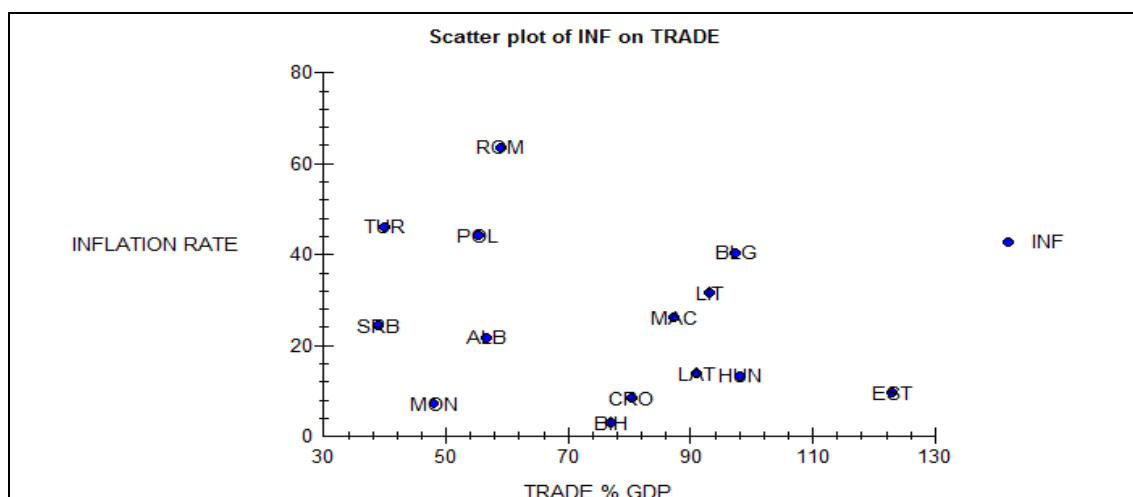Estimated correlation matrix between ER and trade show positive coefficient although of small size.

```
Estimated Correlation Matrix of Variables

****************************************************************************

                 ER        TRADE

  ER          1.0000     .095484

  TRADE       .095484    1.0000

****************************************************************************
```

11

f) Inflation

Inflation, average consumer prices Index, 2000=100. Here first we will present a scatter of inflation and Trade as % of GDP.

From the scatter is evident that higher inflation is associated with lower trade openness, for example Romania has highest inflation rate from the countries in the sample while Estonia has highest Trade and one of the lowest average inflation. Macedonia is in the middle of this sample, but also with high values of trade percentage to GDP and double digit inflation.

**Table 1.3** INF and Trade and correlation matrix of Inflation and Trade

OBS	COUNTRY	INF	TRADE
1	ALBANIA	21,68073	56,62061
2	BIH	2,814231	77,11888
3	BULGARIA	40,32128	97,51677
4	ESTONIA	9,447333	123,1373
5	HUNGARY	13,23595	98,20598
6	LATVIA	13,68353	90,95152
7	LITHUANIA	31,40437	93,09437
8	MACEDONIA	25,97468	87,42893
9	MONTENEGRO	7,112455	48,12252
10	POLAND	44,1738	55,29973
11	ROMANIA	63,53405	59,07675
12	SERBIA	24,29886	38,95737
13	TURKEY	46,03214	40,15636
14	CROATIA	8,236396	80,47098

```
    Estimated Correlation Matrix of Variables

*********************************

                INF        TRADE

INF           1.0000     -.34255



TRADE        -.34255      1.0000

*********************************
```

Estimated correlation matrix shows inverse (negative) relationship between trade as % for GDP and inflation measured by CPI, 2000=100.

g) Unemployment (UNEM)

Unemployment refers to the share of the labour force that is without work but available for and seeking employment. Next scatter presents average values of unemployment and Trade % GDP.
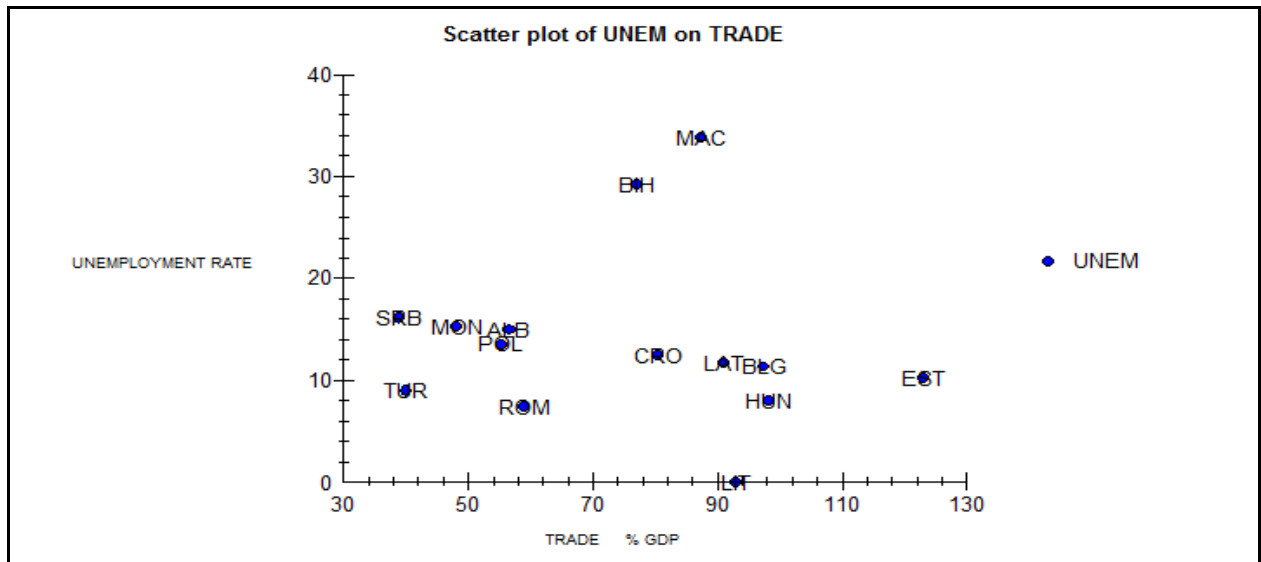
Countries in our sample are all small and open economies; Macedonia on average has highest unemployment .From the theory trade will help to promote lower unemployment.

```
Estimated Correlation Matrix of Variables

*****************************************

            UNEM     TRADE

 UNEM       1.0000   -.085455



 TRADE     -.085455   1.0000

******************************************

```

Estimated correlation matrix shows negative correlation between Unemployment and trade.

h) Current Account Balance

Current account balance (% of GDP) - Current account balance is the sum of net exports of goods, services, net income, and net current transfers. Data are in current U.S. dollars. In economics, the **current account** is one of the two primary components of the balance of

13

payments, the other being the capital account. The current account is the sum of the balance of trade (exports minus imports of goods and services), net factor income (such as interest and dividends) and net transfer payments (such as foreign aid).All of the central and eastern European countries in the sample have Current account deficit which implies that countries are net capital importers, foreign aid is also part of current account Montenegro has highest deficit in current account, Macedonia in this category is similar with Latvia and Lithuania
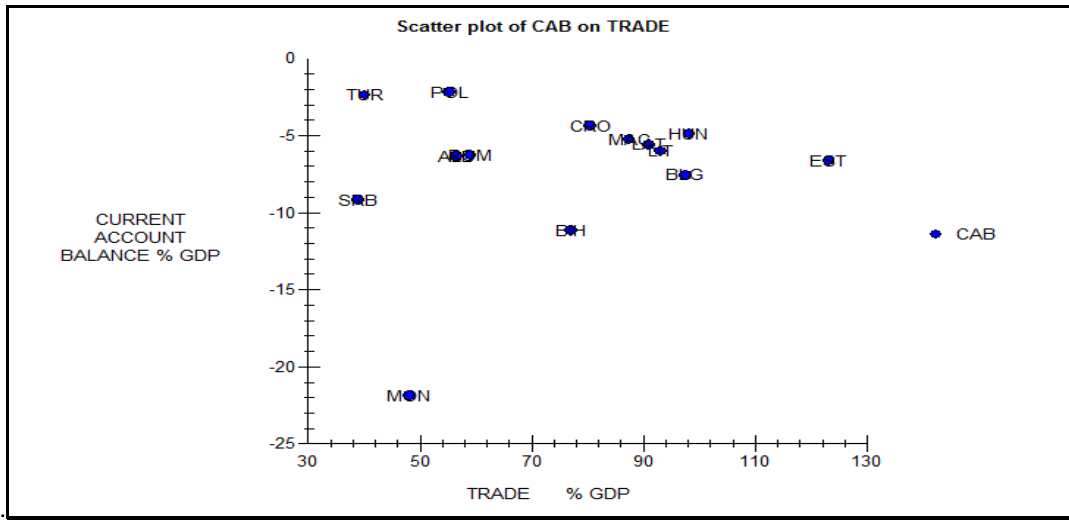

Table 1.4 Current account balance % of GDP and Trade % GDP and correlation matrix of Inflation and Trade

OBS	COUNTRY	CAB	TRADE
1	ALB	-6,34945	56,62061
2	BIH	-11,1563	77,11888
3	BLG	-7,55645	97,51677
4	EST	-6,64058	123,1373
5	HUN	-4,90282	98,20598
6	LAT	-5,59605	90,95152
7	LIT	-6,0045	93,09437
8	MAC	-5,24648	87,42893
9	MON	-21,8862	48,12252
10	POL	-2,2003	55,29973
11	ROM	-6,29023	59,07675
12	SRB	-9,172	38,95737
13	TUR	-2,36968	40,15636
14	CRO	-4,361	80,47098

```
Estimated Correlation Matrix of
Variables

*****************************************

              CAB       TRADE

 CAB         1.0000     .19236



 TRADE        .19236    1.0000

*************************************
```

Estimated correlation matrix shows positive relationship between **Current account balance % of GDP and Trade % GDP.**

i) Real interest rate (IR)

Real interest rate is the lending interest rate adjusted for inflation as measured by the GDP deflator. Macedonia in this period of 22 years has highest real interest rates .From the scatter we can see that Relationship between Real interest rate and trade is U-shaped which implies inverse relationship (this can be spotted from the estimated correlation matrix).
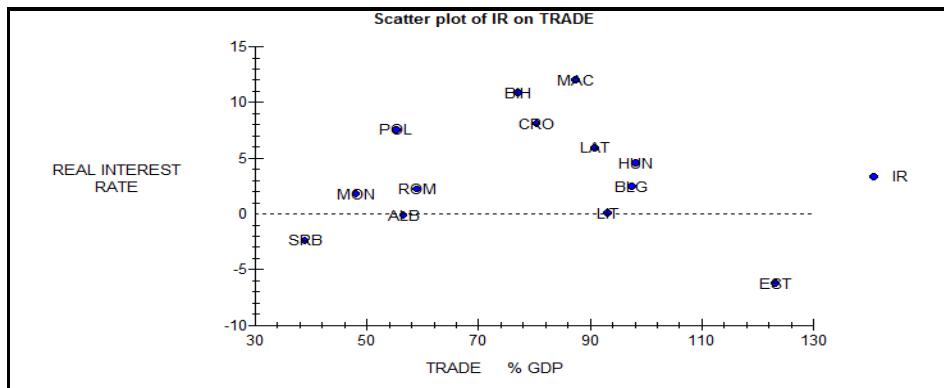

Table 1.4 Real interest rate and Trade % GDP and correlation matrix of Real interest rate and Trade

OBS	COUNTRY	IR	TRADE
1	ALB	-0,16924	56,62061
2	BIH	10,86044	77,11888
3	BLG	2,409168	97,51677
4	EST	-6,25308	123,1373
5	HUN	4,517193	98,20598
6	LAT	5,902634	90,95152
7	LIT	0,059687	93,09437
8	MAC	12,00454	87,42893
9	MON	1,744294	48,12252
10	POL	7,54375	55,29973
11	ROM	2,202193	59,07675
12	SRB	-2,40342	38,95737
13	CRO	8,083765	80,47098

```
Estimated Correlation Matrix of
Variables

**********************************

               IR       TRADE

  IR         1.0000   -.053558


  TRADE     -.053558    1.0000

*******************************
```

j) General government net debt % GDP (GNDP)

Net debt comprises the stock (at year-end) of all government gross liabilities (both to residents and non-residents) minus all government assets (domestic as well as foreign).
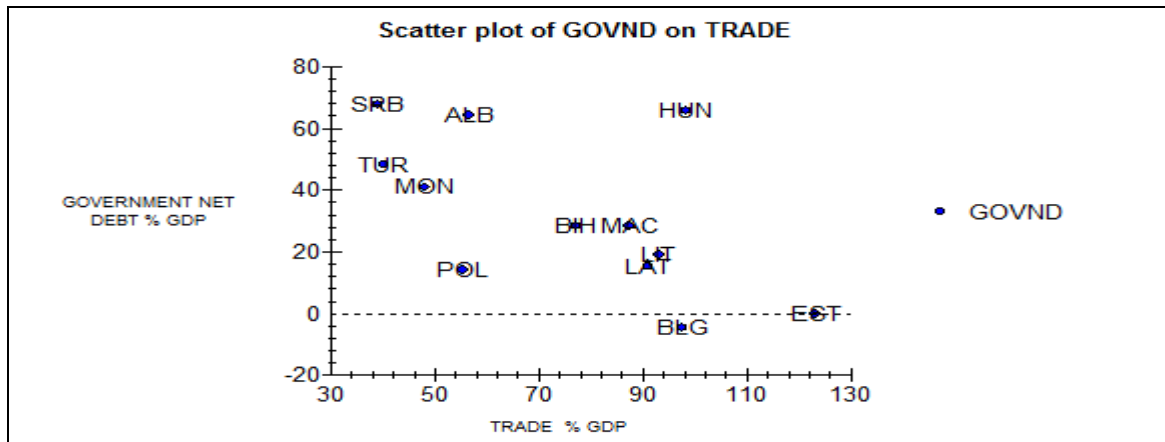
From the previous scatter Government net debt % GDP on Trade % GDP, Serbia has highest government net debt, Macedonia has same government net debt as with Bosnia Estonia has little less than zero government net debt, also form this scatter it is evident negative relationship between trade and government net debt (at lower level of trade as % to GDP, debt is higher, or lower otherwise.)

Table 1.5 General government net debt % GDP and correlation matrix of General government net debt % GDP and Trade

OBS	COUNTRY	GOVND	TRADE
1	ALB	64,1776	56,62061
2	BIH	28,44836	77,11888
3	BLG	-4,68491	97,51677
4	EST	-0,16619	123,1373
5	HUN	65,74629	98,20598
6	LAT	15,26442	90,95152
7	LIT	18,92525	93,09437
8	MAC	28,43438	87,42893
9	MON	41,0273	48,12252
10	POL	14,0048	55,29973
11	SRB	67,65042	38,95737
12	TUR	48,31747	40,15636

```
Estimated Correlation Matrix of Variables

*******************************************

            GOVND       TRADE

GOVND       1.0000     -.59774


TRADE      -.59774      1.0000

**********************************
```

Estimated correlation matrix shows negative correlation between government net debt % GDP and trade % GDP.

2. Regression analysis

Simple linear regression models will be estimated for the whole sample of countries and data will be reported in one Table. Next we will write the model

$$Trade = \beta_0 + \beta_1 GDPG + \beta_2 GDPPPP + \beta_3 INF + \beta_4 UNEM + \beta_5 IR + \beta_6 ER + \beta_7 CAB + \beta_8 GOVND + \beta_9 PPP + e$$

Separate regression for the sample of countries are reported here .Trade is dependent variable

	ALB	BIH	BLG	EST	HUN	LAT	LIT
Variables	Coeff.(p-value)	Coeff.(p-value)	Coeff.(p-value)	Coeff.(p-value)	Coeff.(p-value)	Coeff.(p-value)	Coeff.(p-value)
C	129.09 (.214)	-575.2981[.253]	363.10 [.170]	88.625[.517]	-127.9280 [.011]	55.9117 [.241]	74.4517 [.082]
GDPG	-.32620(.237)	2.5356 [.281]	-6.43 [.207]	3.2348[.135]	.66227 [.528]	.35317 [.794]	.45230 [.397]
GDPPPP	12.331(.070)	-9.9105[.224]	-	2.1333 [.784]	10.0824 [.002]	2.4997[.349]	2.9115 [.094]
INF	-.46309(.467)	.58040 [.572]	-2.9154 [.275]	-.25702 [.873]	2.3120 [.020]	.50068 [.021]	.17038 [.027]
UNEM	1.1427(.141)	7.8937[.172]	15.949 [.136]	4.0475[.384]	1.4863 [.269]	1.5605 [.136]	-1146.1 [.041]
IR	-.19557(.651)	-.21329[.764]	-11.90[.065]	1.4251[.323]	1.4458 [.211]	-.26017 [.758]	-.14812 [.684]
ER	.13958(.176)	-53.1041 [.138]	-174.13 [.163]	-.27194 [.945]	.52069 [.001]	29.2380[.723]	5.6539 [.562]
CAB	-.52667(.201)	-.86372[.186]	-3.5072[.119]	2.1238 [.401]	.16646 [.879]	-.36906 [.656]	1.4514 [.058]
GOVND	-.67303(.130)	.36224[.585]	-	5.2117 [.322]	-	-	-
PPP	-2.4007(.180)	744.1159[.197]	-140.31[.408]	11.0091 [.724]	-.28447 [.428]	-92.86[.651]	3.8895 [.829]
R²	.99933	.99128	.99755	.83330	.97423	.81018	.96714
F-stat(p-value)	[.003]	[.215]	[.101]	[.230]	[.000]	[.028]	[.000]
Observation	12	11	9	14	19	17	16

<u>Trade is dependent variable</u>

	MAC	ROM	SRB	TUR	CRO	POL
Variables	Coeff.(p-value)	Coeff.(p-value)	Coeff.(p-value)	Coeff.(p-value)	Coeff.(p-value)	Coeff.(p-value)
C	282.32 [.116]	74.9568 [.188]	46.9585 [.160]	29.9049 [.761]	55.4595[.000]	-3.9354 [.942]
GDPG	-.3726 [.550]	.22844[.416]	-24.05[.153]	.52288[.559]	1.1959 [.005]	2.2529 [.106]
GDPPPP	-9.636 [.368]	1.3237 [.844]	-	.98198[.865]	3.0146[.024]	.50373[.775]
INF	.9482 [.183]	.18457[.249]	2.7022[.164]	.22301[.588]	.27782 [.220]	1.4289[.263]
UNEM	-1.645 [.153]	-3.8126 [.099]	15.6364[.145]	-1.90 [.668]	1.6492 [.181]	-.93352[.421]
IR	-2.8936[.124]	.60385[.213]	1.9692[.220]	-	.28312 [.420]	-.35249[.368]
ER	-1.0795[.274]	10.2323 [.149]	-1.3508 [.163]	.68322 [.983]	.95521 [.539]	-6.2474[.364]
CAB	.38333 [.461]	.58499[.464]	-21.42[.151]	1.0820[.609]	-1.0414[.090]	.89408[.340]
GOVND	-	-	-	-.028477 [.969]	-	1.6900[.292]
PPP	1.9862[.591	-13.9951 [.649	11.9733[.173]	30.6594 [.739]	-20.6056[.009]	32.7273[.415]
R²	.99916	.90593	.99786	.38186	.94788	.99602
F-stat(p-value)	[.063]	[.005]	[.094]	[.889]	[.000]	[.018]
Observation	10	16	9	14	17	12

This econometric specification gives ambiguous results, due to a lack of quality data about these countries. Montenegro was left over from the regression analysis since it doesn't have its own data before 2006. Functional form in all of the models was correctly specified except in the case of BIH, Estonia, and Turkey. Explanatory power in all of the models was very high, except in the model for Turkey. F-stat was very significant, so the variables jointly significantly explain Trade as dependent variable, except in the models for BIH, Estonia, and Turkey

Conclusion

This empirical review tried to explain relationship between trade % GDP and other important variables in International macroeconomics. Trade as it is also in our paper is correlated with Exchange rate, current account balance as % GDP, unemployment, inflation, fiscal policies

(Government net debt, etc. The main disadvantage when analyzing Macedonia and other central and Eastern European countries are lack of quality data from the official sources.

References

1. *Feenstra, C.Roberts*, (2004), *Advanced international trade: theory and evidence,* Princeton University Press

2. **Krugman, R.Paul, Obstfeld, Maurice** (2009), *International economics: Theory and Policy* ,Pearson Addison-Wesley

3. **Madura, Jeff, (2009),** *International Financial Management*, **Cengage Learning, Tenth edition**

4. **Obstfeld, Maurice, Rogoff,S.,Kenneth,(1998),** *Foundations of international macroeconomics,* The MIT Press , London , England

5. **Rogoff,S.,Kenneth, Husain,M.,Aasin,Mody Asholka, Brooks, Robin, Oomes, Nienke**, (2004), *Evolution and performance of exchange rate regimes*, International Monetary Fund, Washington

6. **The World Bank database**

7. **World Economic Outlook (WEO) database**