# Assessing Independent Monetary Policy in Small, Open and Euroized Countries: Evidence from Western Balkan

## *Empirical Economics, forthcoming*

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# Structure of the presentation

- Objectives of the paper

- Stylized facts on constraints

- Literature review

- Methodology

- Data

- Results

- Conclusion

- Further investigation

# 1. Objectives of the paper

- In the current context of continuous reassessment of the sustainability of the euro area, this paper attempts to answer three questions relevant for monetary integration of the WBC by reviewing previous empirical evidence and using several econometric techniques:

  - what are the constraints on an independent monetary policy;

  - what is the need for operating an independent monetary policy, and

  - what is the ability to conduct an independent monetary policy.
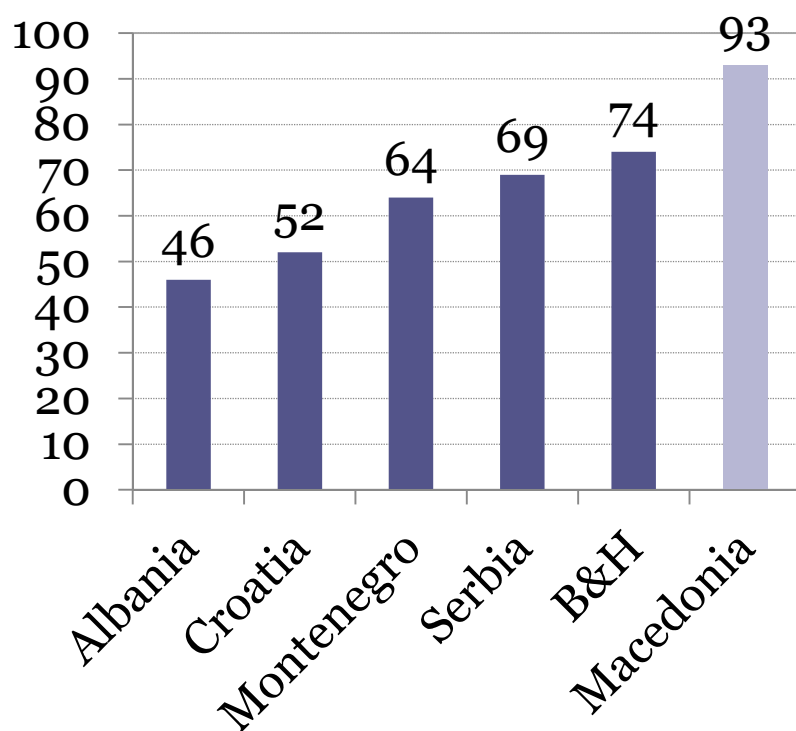
# 2. Stylized facts of constraints on monetary policy of the WBC

- Different exchange rate regimes support price stability in the WBC:
  - Official euroisation (Montenegro);
  - Currency board (Bosnia and Herzegovina);
  - Pegged exchange rate (Macedonia);
  - Managed float (Croatia);
  - Relatively free float (Albania and Serbia).

- Several factors may explain the stability oriented ERR in the WBC:
  - Small economies;
  - High level of openness;
  - High level of euroisation.

- Empirical evidence suggest that more flexible ER coupled with IT may break the link between ER and prices (Égert and MacDonald, 2009)
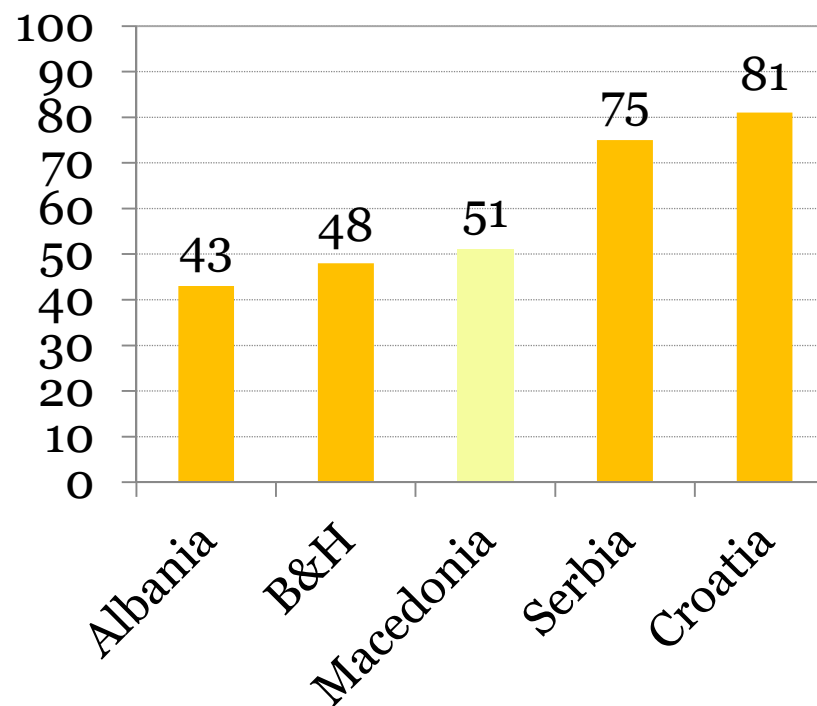  - It seems to work for Albania, but not for Serbia.

# 2. Stylized facts of constraints on monetary policy of the WBC <span>(Cont'd)</span>

## Openness in 2010 (%)



Albania 46, Croatia 52, Montenegro 64, Serbia 69, B&H 74, Macedonia 93

## Euroisation in 2010 (%)



Albania 43, B&H 48, Macedonia 51, Serbia 75, Croatia 81

# 3. Literature review

3.1. Need for operating an independent monetary policy

3.2. Ability to conduct an independent monetary policy

# 3.1. Literature review

- Country would benefit from monetary union if its shocks are highly correlated with those of the union (Mundell, 1961);
  - Shock synchronization is likely to be higher the higher is the degree of product diversification (Kenen, 1969).

- Two competing views on the shocks' and business cycles' synchronization:

  - Monetary integration may enhance intra-industry trade and strengthen industrial diversification leading to an exposure to similar shocks (European Commission, 1990);

  - Monetary integration could enhance greater specialisation leading to greater vulnerability of sectors (regions) to asymmetric shocks (Krugman, 1993).

# 3.1. Literature review

- Endogeneity argument by Frankel and Rose (1998) supports the former view:
  - A country is more likely to satisfy criteria for entry into a currency union *ex post*;
  - The membership in the monetary union is expected to provide a substantial impetus for trade expansion and, consequently, highly correlated business cycles;
  - Empirically, they estimate that a closer bilateral trade linkage is associated with more correlated economic activity.
- Fidrmuc (2001) finds that it is the structure of trade (intra-industry trade) - and not the intensity of bilateral trade - that contributes to a higher correlation of output fluctuations.

# 3.1. Literature review

- Fidrmuc and Korhonen (2006) rely on meta-analysis and conclude that economic cycles in the transition countries are positively correlated with the euro-area cycle;
  - The level of synchronization of some of the CEEC (Hungary, Poland and Slovenia) match or exceed the convergence of several of the smaller, peripheral euro-area members (Greece, Portugal and Ireland).

- Babetskii (2004) suggests that:
  - An increase in trade intensity positively influences the symmetry of demand shocks;
  - The effects of trade intensity on the symmetry of supply shocks are found to be ambiguous.

# 3.2. Literature review

- The way the transmission mechanism operates is also important for assessing the costs of relinquishing an independent monetary policy;

- Several studies for the euro area find that the interest rate channel has the most prominent role in comparison with other monetary channels;

- The exchange rate channel is stronger than the interest rate channel in the CEEC, although the exchange rate pass-through has decreased over time and the interest rate pass-through improved.

# 4. Methodology

- Two approaches for investigation of **shock synchronization**:

  1. In a large body of the empirical literature, the judgment about shocks is derived from the cross-national correlations of real output and prices;
     - This approach does not allow to make a distinction between the shocks *per se* and the policy responses to them:
       - Symmetric reaction to asymmetric shocks;
       - Asymmetric reaction to symmetric shocks.

  2. Isolation of shock incidence from the effects of responses on the synchronisation of economic variables;
     - Differentiation between the types of shocks: aggregate supply and demand shocks.

**Shock estimation following the second approach:**

**Step 1: Estimation of structural shocks**

- The identification of aggregate supply and demand shocks is based on the SVAR model of Blanchard and Quah (1989);

- Fundamental assumption:
  - Supply shocks affect output and prices permanently;
  - Demand shocks change prices permanently, but output temporarily;
  - Both shocks affect the output in the same direction;
  - The effect on the prices has opposite direction:
    - Favourable supply shock reduces prices;
    - Favourable demand shock increases prices.

- The estimated supply and demand shocks for each transition country are related with those in the euro area in order to measure the extent of synchronisation.

# 4. Methodology

## IR functions for Macedonia

**Response of real output to supply shock**
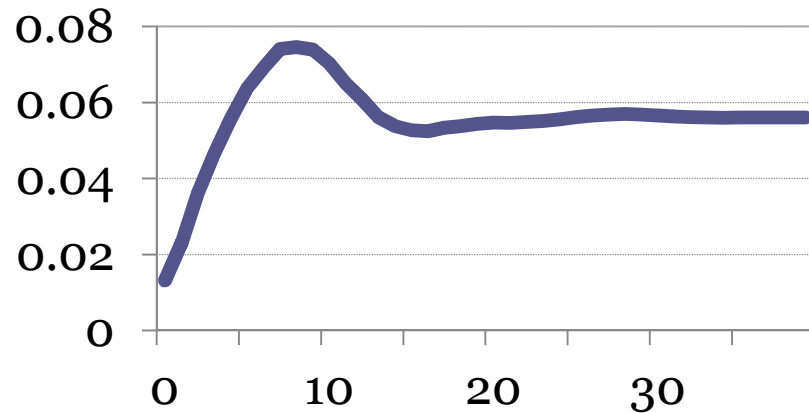
**Response of real output to demand shock**
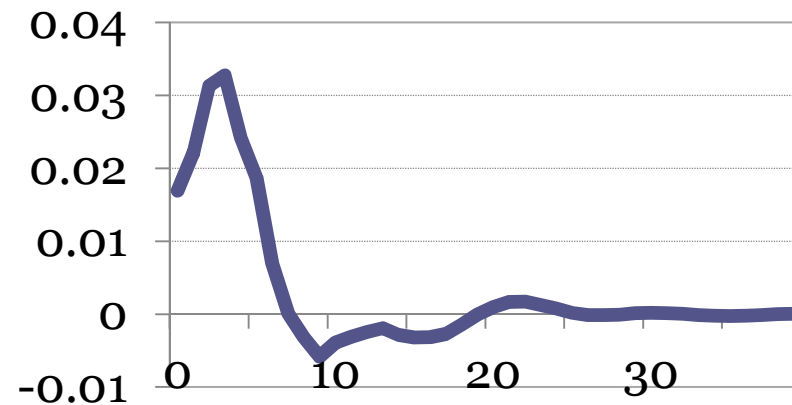
**Response of prices to supply shock**
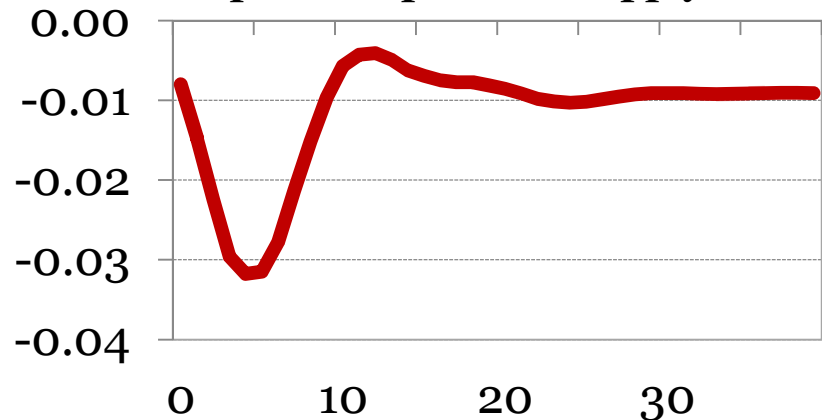
**Response of prices to demand shock**
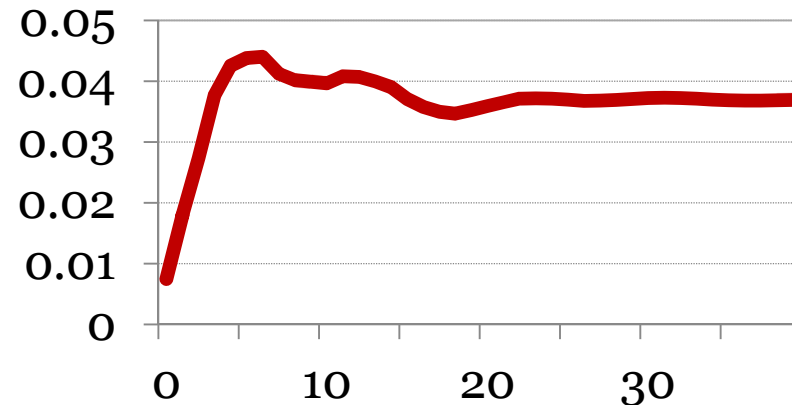
# 4. Methodology

## Step 2: Estimation of shock covergence

- The SVAR methodology enables estimation of a static measure of shock symmetry and does not reveal how it evolves over time;

- It is expected that the shocks similarity evolves in line with market integration in Europe, which is particularly relevant for the European transition countries whose economic relations have been deepening with the European Union during the last two decades;
  - System of equations developed by Haldane and Hall (1991) and adapted by Boone (1997) enables estimation of the evolution of shock symmetry, measured by the time-varying correlation coefficients for supply and demand shocks, by using the Kalman filter technique.

# 4. Methodology

## Investigation of interest rate channel:

### Step 1: Interest rate pass-through

- Multivariate approach (Johansen procedure, 1995);
  - CB interest rate, money market interest rate, banks' borrowing and lending interest rates.

### Step 2: Fully fledged interest rate channel

- VAR model, which is comparable with the benchmark model of Mojon and Peersman (2001);
  - Exogenous variables to control for changes in world demand and inflation (US CPI, US real GDP, and the US short-term nominal interest rate);
  - Endogenous variables (domestic real GDP and consumer prices, the euro-area nominal short-term interest rate, the nominal bilateral euro exchange rate and the domestic short-term nominal interest rate).

# 5. Data

- Countries: Albania, Croatia, Macedonia and Serbia;

- Period: January, 1997 - June, 2011 (quarterly, monthly).

# 6. Results – Shock synchronization
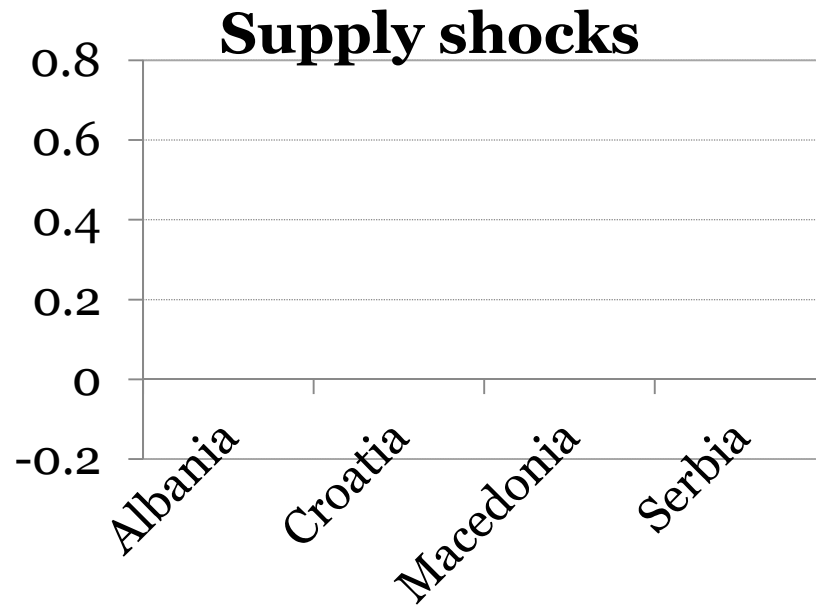
**Average GDP growth and inflation 1997-2011 H1**



GDP growth

6
5
4
3
2
1
0

Euro area  Albania  Croatia  Macedonia  Serbia

Inflation

25
20
15
10
5
0

Euro area  Albania  Croatia  Macedonia  Serbia
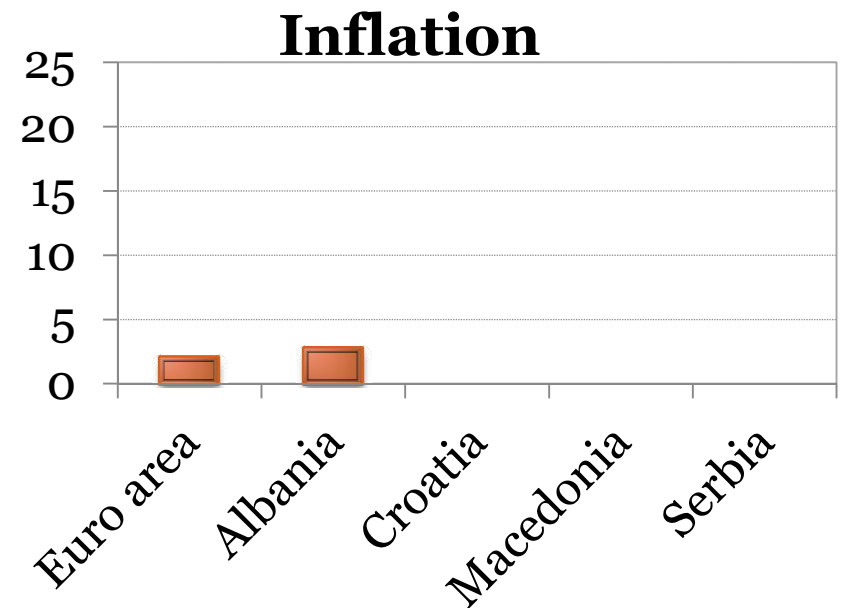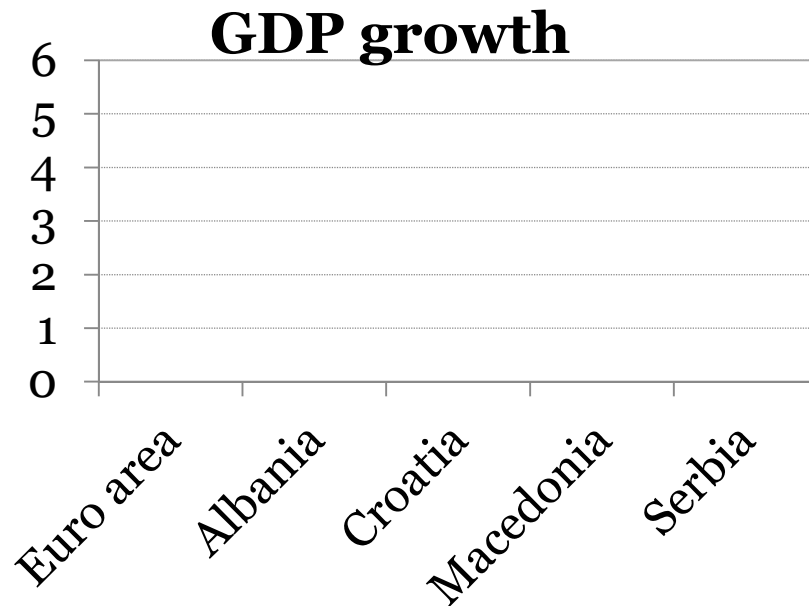
**Synchronization for de-trended components of real output and prices vis-à-vis the euro area**



**Real output**

0.8
0.6
0.4
0.2
0

Albania    Croatia    Macedonia    Serbia

☐ First difference    ☐ HP filter



**Prices**

0.8
0.6
0.4
0.2
0

Albania    Croatia    Macedonia    Serbia

☐ First difference    ☐ HP filter
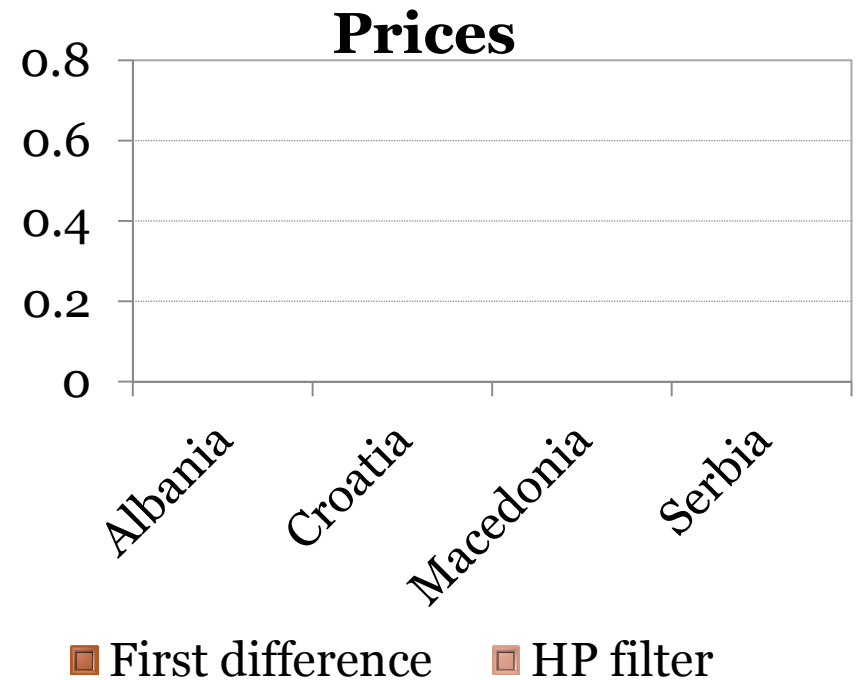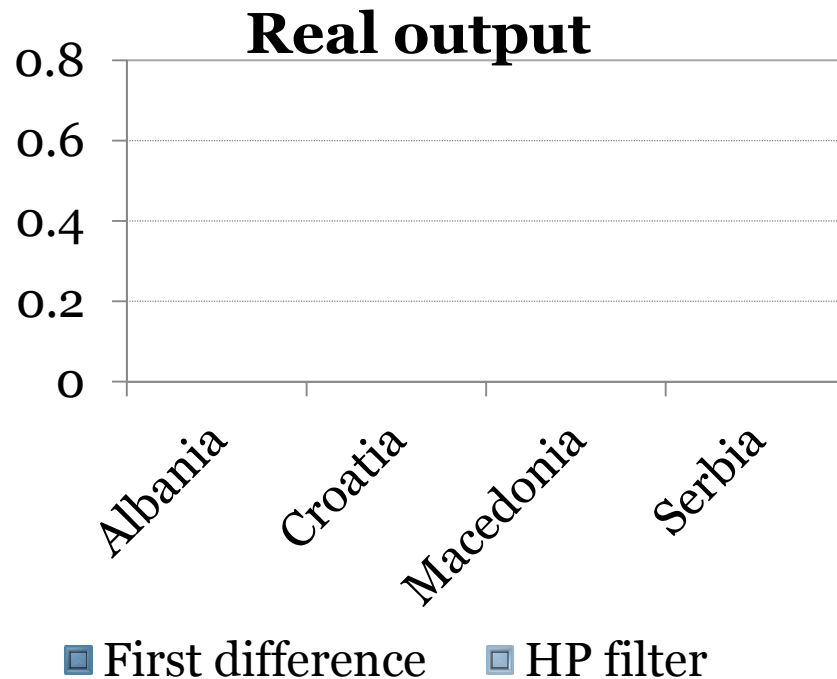
# 6. Results – Shock synchronization

## Shock synchronization – supply and demand shocks – vis-à-vis the euro area



### Supply shocks

| | |
|---|---|
| 0.8 | |
| 0.6 | |
| 0.4 | |
| 0.2 | |
| 0 | |
| -0.2 | |

Albania    Croatia    Macedonia    Serbia

### Demand shocks

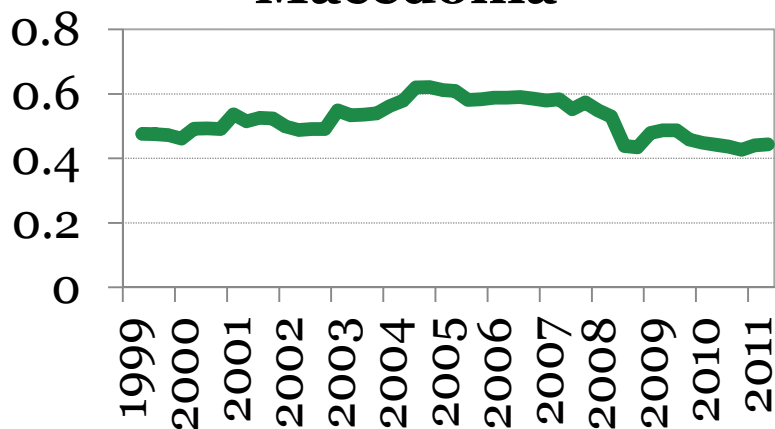| | |
|---|---|
| 0.8 | |
| 0.6 | |
| 0.4 | |
| 0.2 | |
| 0 | |

Albania    Croatia    Macedonia    Serbia
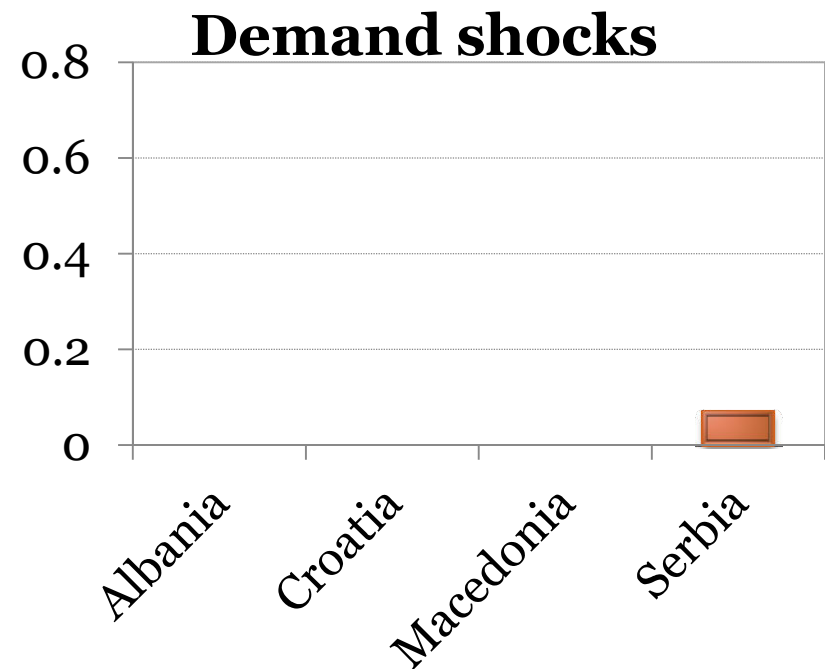
# 6. Results – Shock synchronization (Cont'd)

## Correlation of responses of real output and prices to supply and demand shocks vis-à-vis the euro area
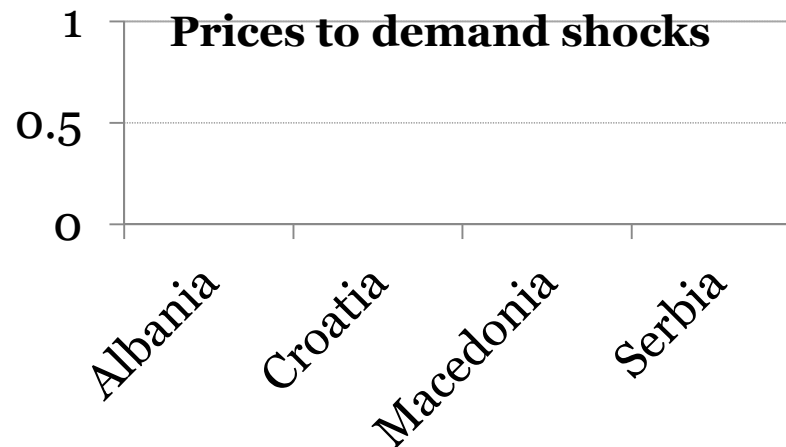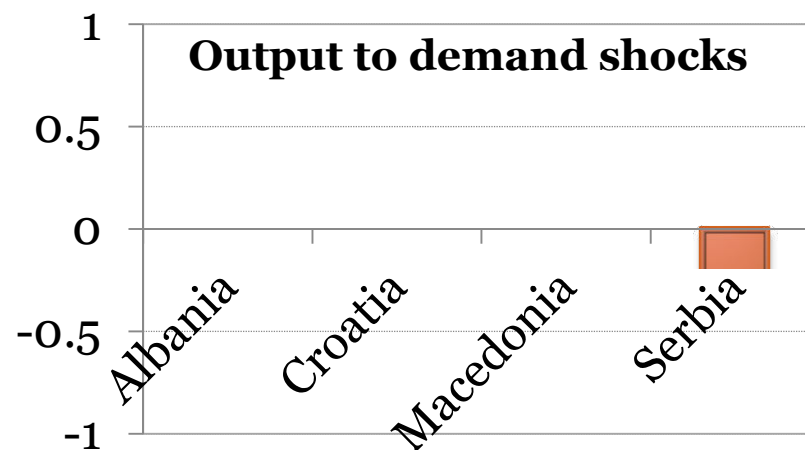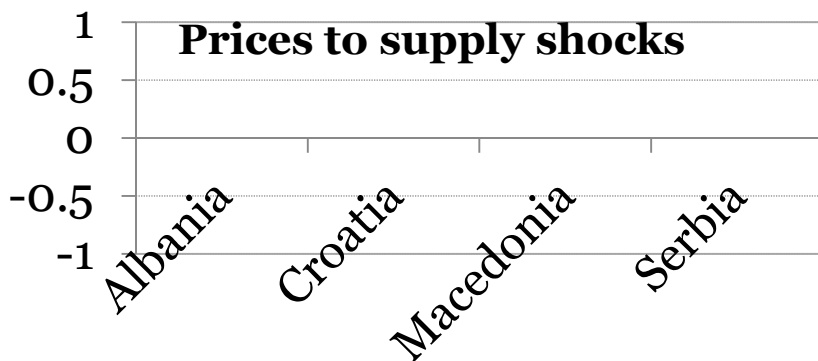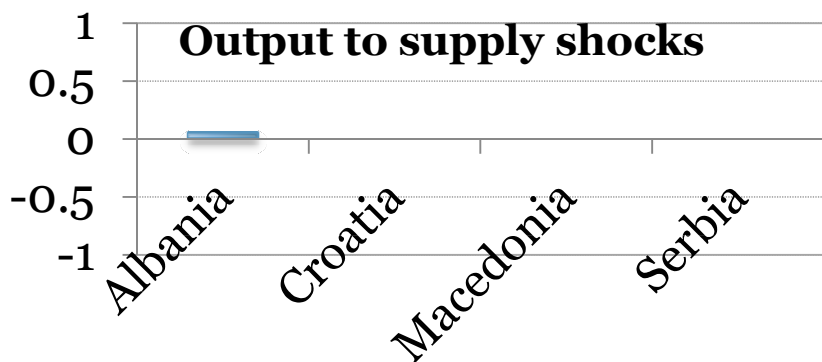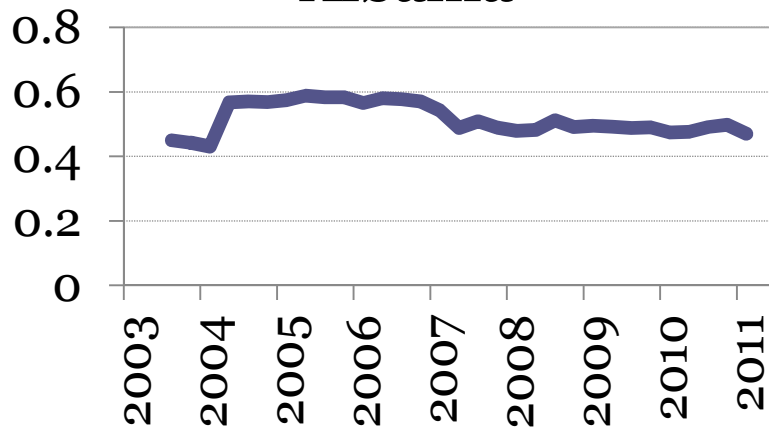
## Supply shock convergence
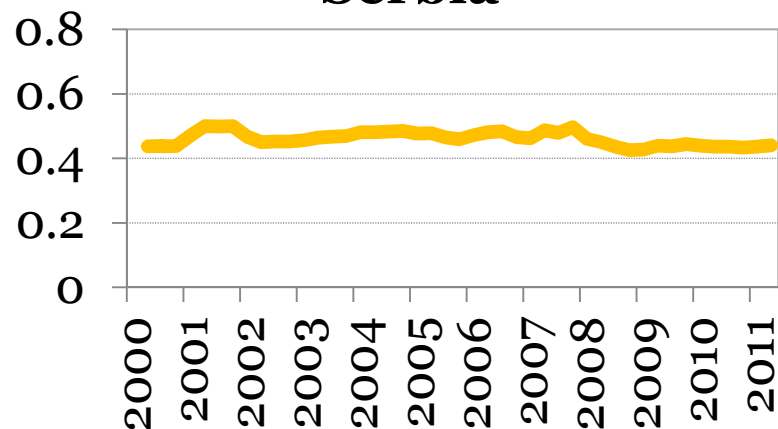
# 6. Results – Shock synchronization (Cont'd)

## Demand shock convergence
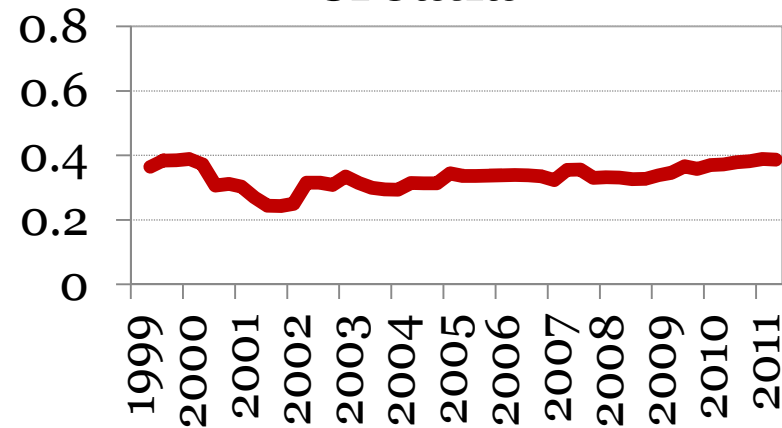
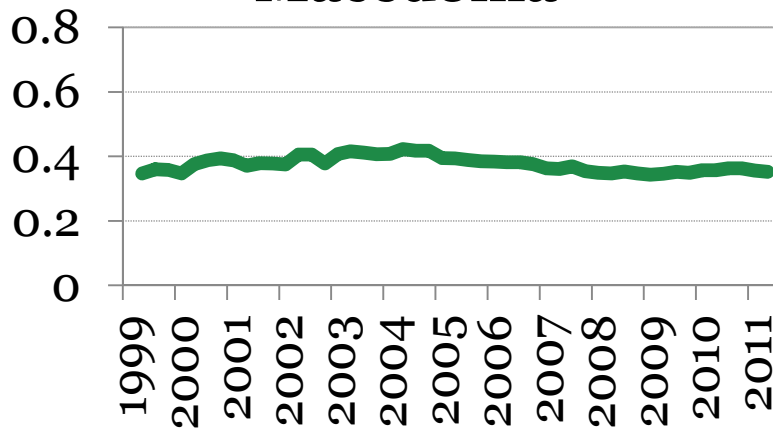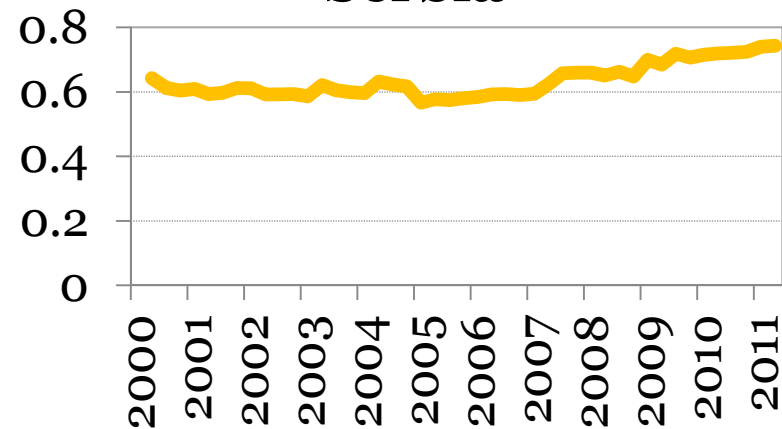## Pass-through of Central bank rate changes



**Money market rates**

Long run PT
Speed Adj

Albania   Croatia   Macedonia   Serbia



**Borrowing rates**

Long run PT
Speed Adj

Albania   Croatia   Macedonia   Serbia



**Lending rates**

Long run PT
Speed Adj

Albania   Croatia   Macedonia   Serbia
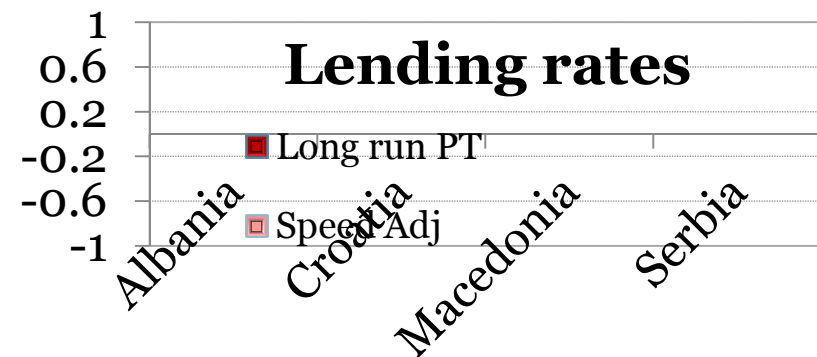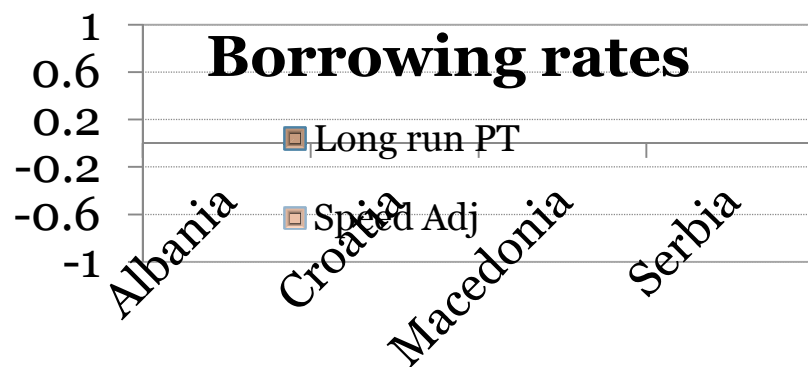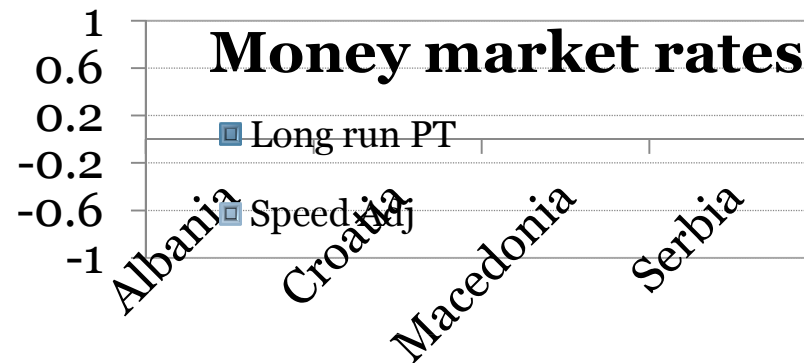
# 6. Results – Fully fledged IR channel (Cont'd)

**Response of consumer prices in Macedonia to policy rate**
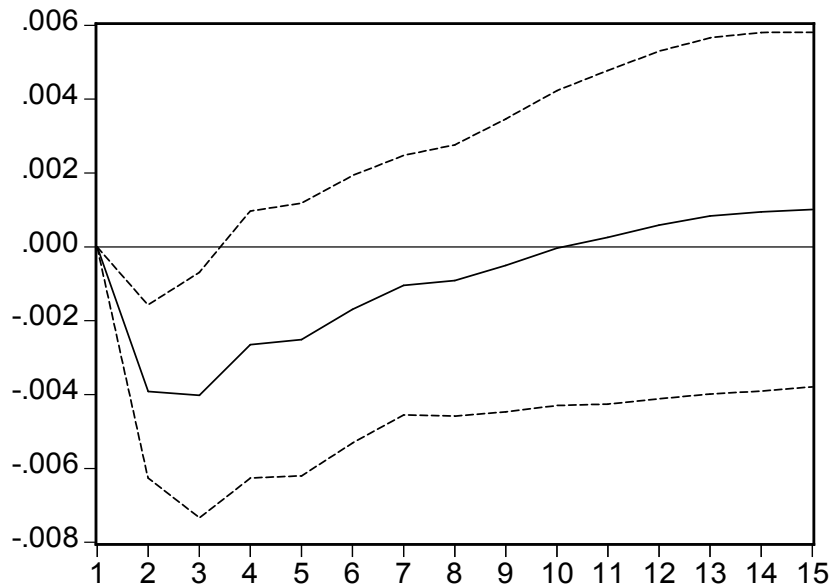
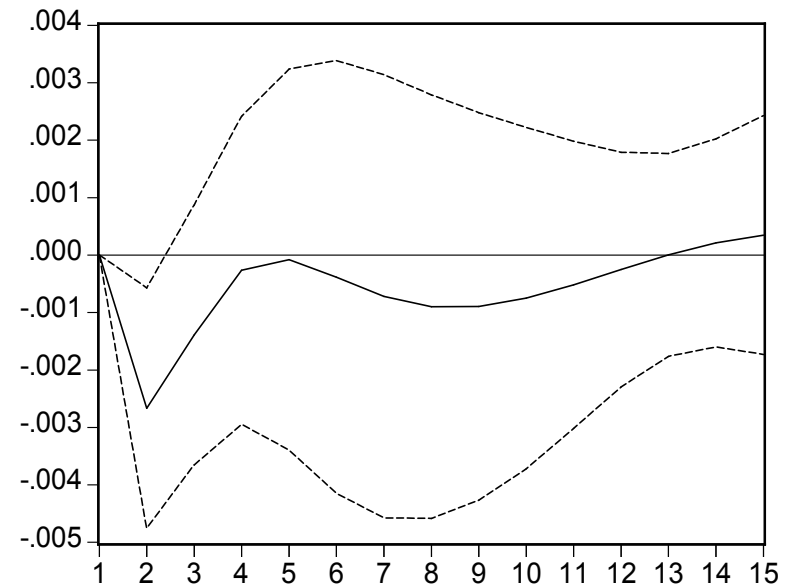**Response of real GDP in Serbia to policy rate**

# Conclusion

- First question – Constraints on an independent monetary policy

  - Scope for an independent monetary policy is relatively limited, except to some extent for Albania...

  - However, this is not sufficient argument to conclude that costs from relinquishing the exchange rate instrument are low!

# Conclusion

- Second question – Need for operating an independent monetary policy

  - Low synchronization between supply and demand shocks hitting the WBC and the euro area indicating potentially high costs of losing independent monetary policy;
  - Supply and demand shock convergence process in the WBC vis-à-vis the euro area is either slow or absent.

# Conclusion

- Third question – Ability to conduct an independent monetary policy

    - The Central banks of Macedonia and Albania can influence banks' interest rates to some extent...
    - But, further transmission to prices and output is very weak for all WBC!

# Conclusion

- Inconclusiveness?!

  - Limited scope!
  - Very high need!
  - Relatively low ability, but strengthening!

- Structural reforms to support the inflow of FDI from, and trade integration with, the (core) euro area, in particular broadening the horizontal intra-industry trade, which is expected to speed up the shock convergence process.

# Further investigation

- Plenty subareas to contribute!

- Our choice: A shock perspective of the determinants of convergence of transition countries vis-à-vis the euro area…

Thank you for your attention!