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## Eurozone indices: a new model for measuring central bank independence

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## **Editorial**

On 19-21 November 2009, the Bank of Greece co-organised with the Bank of Albania the 3<sup>rd</sup> Annual South-Eastern European Economic Research Workshop held at its premises in Athens. The 1<sup>st</sup> and 2<sup>nd</sup> workshops were organised by the Bank of Albania and took place in Tirana in 2007 and 2008, respectively. The main objectives of these workshops are to further economic research in South-Eastern Europe (SEE) and extend knowledge of the country-specific features of the economies in the region. Moreover, the workshops enhance regional cooperation through the sharing of scientific knowledge and the provision of opportunities for cooperative research.

The 2009 workshop placed a special emphasis on three important topics for central banking in transition and small open SEE economies: financial and economic stability; banking and finance; internal and external vulnerabilities. Researchers from central banks participated, presenting and discussing their work.

The 4<sup>th</sup> Annual SEE Economic Research Workshop was organised by the Bank of Albania and took place on 18-19 November 2010 in Tirana. An emphasis was placed upon the lessons drawn from the global crisis and its effects on the SEE macroeconomic and financial sectors; adjustment of internal and external imbalances; and the new anchors for economic policy.

The papers presented, with their discussions, at the 2009 SEE Workshop are being made available to a wider audience through the Special Conference Paper Series of the Bank of Greece.

Here we present the paper by Arta Pisha (Bank of Albania) with its discussion by Eugenie Garganas (Bank of Greece).

February, 2011

Altin Tanku (Bank of Albania)  
Sophia Lazaretou (Bank of Greece)  
*(on behalf of the organisers)*



# **‘EUROZONE INDICES’: A NEW MODEL FOR MEASURING CENTRAL BANK INDEPENDENCE**

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## **ABSTRACT**

This paper aims to propose a new model for measuring central bank independence. It is based, among others, on previous *de jure* central bank independence indices, on the European Monetary Union (EMU) pre-accession and integration requirements and central bank independence (CBI) legislations. The new central bank independence indices are called ‘Eurozone indices’, because are based mainly on European legislation. The new constructed indices have more advantages than disadvantages and might be very helpful in assessing central bank independence. They can unify the way of measuring central bank independence for many countries, based on the sophisticated legal base of European legislation. The indices can be used to measure CBI not only in the EMU and pre-accession EMU countries but also in all countries which expect to enjoy a high level of central bank independence. In this paper, ‘Eurozone indices’ are applied to measure CBI in eight South-Eastern European (SEE) countries.

*Keywords:* central bank independence indices, European legislation, SEE central bank independence legislation, CBI Eurozone Indices.

*JEL classification:* E58, E61

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## 1. Introduction

Central bank independence is an essential component of modern monetary systems. It is a very important issue, especially in times of global crises. At present, a specific central bank independence index based on the pre-accession requirements for joining the EU and the criteria for joining the European Monetary Union (EMU) does not exist. This paper is an effort to realize such an index. The intention is to propose a new model for measuring central bank independence, which can be useful for both pre-accession and potential euro area countries.

The methodology used is based on *de jure* Central Bank Independence (CBI) indices, the EU pre-accession requirements, the CBI convergence criteria and SEE CBI legislation, as well as on European Union (EU) legislation. The four specific indices<sup>1</sup> developed are called ‘Eurozone Indices’ and are based on the Treaty, the Statute<sup>2</sup> and legal considerations. Under the methodology proposed, the respective ‘Eurozone Indices’ are calculated and presented for eight South-Eastern European (SEE) countries and the European Central Bank (ECB).<sup>3</sup> The latter is considered the most independent central bank and therefore serves as the benchmark for our analysis. The four indices are presented with a discussion of their advantages and disadvantages.

The paper suggests that the constructed ‘Eurozone Indices’ might be used to measure CBI in all countries which intend to enjoy a high level of CBI, especially in the EMU and pre-accession EMU countries. Given the importance of CBI, the constructed ‘Eurozone Indices’ can be also used as possible quantitative convergence criteria<sup>4</sup> for central bank independence in the euro area.

The rest of the paper is organized as follows. Section 2 presents the methodology used. Section 3 deals with the new model developed for measuring central bank

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<sup>1</sup> The four indices are: Functional CBI-Eurozone Index; Institutional CBI-Eurozone Index; Personal CBI-Eurozone index; Budgetary CBI-Eurozone Index.

<sup>2</sup> i.e. the protocol on the Statute of the European System of Central Banks and the European Central Bank (1992).

<sup>3</sup> This paper is focused mainly on the methodology proposed for creating the ‘Eurozone Indices’. More detailed explanations regarding the measurement of SEE CBI by using ‘Eurozone Indices’ are presented in the Albanian version of the paper.

<sup>4</sup> The Maastricht convergence criteria refer to price, fiscal, exchange rate and long-term interest rate developments.

independence. Section 4 applies the ‘Eurozone Indices’ to measure SEE central bank independence while Section 5 discusses their advantages and disadvantages. Finally Section 6 concludes.

## **2. Central bank independence indices: methodology**

Under conditions of global economic crisis, central banks have to be vigilant in guarding their legal and real independence. At the centre of this paper is the necessity of respecting the central bank independence criteria both in the euro area and in those countries which intend to succeed to the European Monetary Union in the near future.

The methodology used to create and propose the ‘Eurozone Indices’ is based on the *de-jure* existing CBI indices used for measuring CBI such as Cukierman’s indices, the BP index, the GMT index, the ES index etc; on the legislation on CBI in SEE countries which seek accession to the euro area; on pre-accession and integration requirements<sup>5</sup>; on the EC and ECB convergence reports; on the Maastricht convergence criteria; and finally, on specific logical arguments guided by EU legislation to evaluate the level of CBI.

Taken into consideration is the importance of the pre-accession and integration requirements in the Treaty<sup>6</sup>, as well as the convergence criteria which have to be met regarding central bank independence (see Article 108 and the integration of the central banks into the European System of Central Banks (ESCB) and Article 14.3 of the Statute of the ESCB).

In the EU, the principle of CBI has a *quasi*-constitutional basis. Article 108 of the Treaty establishing the European Community states that: ‘...neither the ECB, nor a national central bank ...shall seek or take instructions from Community institutions or bodies, or any government of a member state or any other body’.

An important issue is the fact that ‘each member state shall ensure at the latest at the date of the establishment of the ESCB, that its national legislation including the

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<sup>5</sup> Pre-accession and integration requirements respectively, for new Member States that joined, or will join EMU after the beginning of the Stage Three and full legal integration of an NCB into the Eurosystem.

<sup>6</sup> Treaty on European Union (1992).

statute of its national central bank is compatible with the Treaty and the Statute of the ESCB'.<sup>7</sup> This means that the countries which intend to join the EU by the date of their EU accession must have adjusted their national legislation on CBI in accordance with the EU Treaty and the ESCB and the ECB statute. However, this requirement came into existence before any specific CBI index based on the criteria for accession to the euro area or the pre-accession requirements had been calculated. The intention of this paper is to develop a new model for measuring CBI based mainly on such criteria and requirements.

The 'Eurozone Indices' proposed here could also become part of the Maastricht Treaty convergence criteria (dealing with price stability, the government's financial position, the exchange rate and the margins of fluctuations in ERM II, and long-term interest rates). More importantly, they can be regarded as quantitative criteria instead of qualitative ones.

The resulting 'Eurozone Indices' are thus *de jure* indices based on a legal basis for central bank independence. The values taken vary from zero to one (0 to 1). Explicitly, the EMU requirements on CBI are considered and valued at the maximum value of one (1) in the case that legislation guarantees a high level of CBI. By contrast, when central bank legislation does not guarantee the required independence, the index takes a value close to zero (0). The four proposed 'Eurozone Indices' are named after the EMU preconditions as follows:

1. Functional CBI
2. Institutional CBI
3. Personal CBI
4. Financial and Budgetary CBI

The calculation of each of the four indices is based on central bank legislation. In cases when the EU legislation does not specify a particular issue of CBI, other criteria are used. The conversion of qualitative values into quantitative ones is based on the specific ranking of these criteria.

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<sup>7</sup> Article 109 of the Treaty.

An important issue in constructing these indices is the choice of weights. The weights are based on the importance that the ECB legislation assigns to different issues. After an analytic classification, a ranking and a weighting of the various independence requirements, the methodology for calculating the four main CBI indices is determined and applied to assess the level of CBI in eight SEE countries.

The methodology for calculating the indices is not limited only to the euro area or the potential euro area countries. Since the ECB is widely considered to be one of the most independent central banks in the world, the ‘Eurozone indices’ can be also applied to any country seeking a high level of CBI.

### **3. ‘Eurozone Indices’: a new model for measuring central bank independence**

As Bini Smaghi (2007)<sup>8</sup> has noted ‘...The extent and nature of central bank independence can be assessed on the basis of its legal provisions... Four categories of central bank independence can be considered: functional, institutional, personal and financial’. Based on this classification, in this section, we explain in detail the methodology proposed for calculating the four ‘Eurozone indices’ of CBI.

#### **3.1 Functional CBI: the ‘Eurozone Index’**

Functional independence requires that the main objective of the national central bank of an EU member state must be fully in line with the main objective established by the Treaty, that is, price stability. It is important that functional independence has to be clear and legally certain. With respect to monetary policy operations, the central bank must be fully autonomus in setting the level of the short-term interest rate in the money market.<sup>9</sup> Functional CBI is calculated on the basis of two main criteria: (i) the primary objective of the central bank and (ii) the secondary objectives of the central bank.

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<sup>8</sup>Bini Smaghi’s (member of the Executive Board of the ECB) speech at the Conference *Central Bank independence: from theory to practice. Good Governance and Effective Partnership*, Budapest, Hungarian National Assembly, 19 April 2007.

<sup>9</sup> Bini Smaghi’s (2007) speech.

To measure the level of Functional CBI using the first criterion, i.e. the primary objective of the central bank, four alternatives are proposed, classified and ranked from the highest level of independence (determined by what applies to the ECB) to the lowest. The various rankings are realized by specifying a value between 0 and 1 based on the provisions by the law. The four alternatives regarding the first criterion are:

*Alternative 1* refers to the ECB case: ‘the primary objective shall be the maintenance of price stability’ as it is described in Article 105 (1) of the Treaty and in Article 2 of the Statute. It takes the maximum value of 1 for the ECB since the level of the ECB independence is considered the highest.

*Alternative 2* is ‘the stability of the domestic currency’ which is valued at 0.66 points. This alternative is considered because stability of the domestic currency can, under certain circumstances, help to achieve price stability. It characterizes currency board regimes and, even if, it indirectly contributes to price stability, the independence of monetary policy is limited.

*Alternative 3* is when ‘the primary objective should be financial stability’. This alternative is valued at 0.33 points, since a financial stability objective for a central bank can be in conflict with price stability.

*Alternative 4* is a rare event and refers to cases when there are no specifications in law regarding the primary objective. In such cases, the minimum value of 0 points is given, because the primary objective is very important for functional CBI.

The second criterion relates to ‘the secondary objectives of a central bank’. There are three alternatives:

*Alternative 1* is that of EMU functional independence<sup>10</sup>, namely ‘without prejudice to the objective of price stability, it shall support the general economic policies of the Community’. This alternative is valued at 1 point, i.e. the highest level of functional policy. It is very important for countries which aspire to EMU membership since the secondary objective is defined by the Treaty as an

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<sup>10</sup> Article 105 (1) of the Treaty and Article 2 of the Statute.

integration requirement. The statutory objectives of an aspiring country have to be adopted upon EU accession and to be in force upon euro adoption. Price stability should be the primary objective of the National Central Banks (NCBs) of the new member states.<sup>11</sup>

*Alternative 2* deals with ‘exchange rate stability’. Exchange rate stability has a positive effect on price stability but in cases of high volatility in foreign exchange markets, central bank interventions can put at risk the price stability objective. It is thus valued at 0.5 points.

*Alternative 3* concerns the case of no secondary objectives for a central bank. In some rare and specific cases, there is no secondary objective and thus functional independence is valued at 0 points. The central bank of Montenegro is such a case since it uses the euro as a currency, however, before joining the EMU. Consequently, its monetary policy is entirely subservient to that of the European Central Bank. One could argue that such a set-up implies that the bank should be valued close to 1. However, there is a key difference: the NCBs in the ESCB have the right to vote regarding monetary policy decisions, whereas the central bank of Montenegro does not have this right.

The weights are very important in calculating the final value of the index. In the case of the functional independence index, the proposed weights of 70% are assigned to the first criterion of ‘the primary objective of the central bank’ and 30% to the second criterion of ‘the secondary objectives’. The correspondent values reflect the relative importance of each criterion. As we mentioned before, there is place for subjectivity in such indices. For that reason, we propose alternatively a weight of 80% for the first criterion and 20% for the second one. In this case, the primary objective is considered as the most important criterion. Anyway, in such cases, it could be decided through consensus which alternative is the most appropriate (see Tables 1 and 2 in the appendix).

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<sup>11</sup> ECB, Convergence report (2004).

### 3.2 Institutional CBI: Eurozone Index

Institutional CBI is related to central bank freedom from instructions and legal personality and independence from other government bodies. In this regard, for the calculation of the Institutional CBI index three criteria are proposed: (i) CB monetary policy formulation and execution, (ii) CB independence to formulate and execute other policies (secondary one) and (iii) the level of CB dependence or other possible influences.

In Article 108 of the Treaty and Article 7 of the Statute, the ECB, the NCBs and the members of their decision making bodies are prohibited to take or seek instructions from Community institutions or bodies, or any government of a member state or any other body. The central bank has to be an institution separate from other government bodies, either at the national level (government and parliament) or EU level (institution and other organizations).

The first criterion proposed here refers to monetary policy, formulation and execution. Four alternatives are proposed:

*Alternative 1* refers to the case that ‘the central bank formulates and executes independently its monetary policy’. If this holds, it is valued at 1 point, because it is considered the highest level of central bank institutional independence.

*Alternative 2* refers to the case that ‘the central bank formulates and executes its monetary policy, but in the case of inconsistency the Parliament has to decide upon it’. This alternative is valued at 0.66 points because, in general, it is consistent to the ECB criterion and the Parliament intervenes only in specific cases. The Parliament has a broader concept compared, for example, to the government.

*Alternative 3* refers to the case that ‘the central bank determines and executes the exchange rate policy’ and is valued at 0.33 points since a currency board, for example, limits the possibility to determine independently the monetary policy regime.

*Alternative 4* is the case when the ‘the central bank does not formulate the monetary policy, but it is responsible for it’. Here, the proposed value is 0 points, because the central bank does not formulate its own monetary policy. It might happen in very rare specific cases.

The second criterion proposed for the measurement of institutional CBI is ‘CB is independent to formulate and execute other policies (the secondary one)’. We propose four alternatives:

*Alternative 1* is related to the case when ‘the central bank does not formulate secondary policies’; this is the case of the ECB. The formulation of monetary policy in the euro area is focused mainly on price stability.<sup>12</sup> The valuation in this case is 1 point.

*Alternative 2* occurs when the ‘the central bank establishes and implements monetary and exchange rate policies’. This alternative provides a considerable level of independence and thus the value proposed is 0.66 points.

*Alternative 3* concerns the case when the ‘...the central bank determines the exchange rate regime with the consent of the Government and/or the Parliament’. In this case, the central bank needs the approval of the Government and/or the Parliament and thus the level of institutional independence is considered lower than in the previous alternatives. It is valued at 0.33 points.

*Alternative 4* concerns the case when ‘the central bank cannot issue money, but is responsible for a solvent banking system and an efficient payment system’. It is a specific case and is valued at 0 points.

The third criterion deals with the ‘level of CB dependence upon instructions or other possible influences’. Here, we propose three alternatives:

*Alternative 1* concerns ‘freedom from instructions or other possible influences’. This proposal is based on Article 108 of the Treaty and Article 7 of the Statute which prohibit the ECB, the NCBs and the members of their decision making bodies to take or seek instructions from the Community institutions or bodies,

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<sup>12</sup> See Noyer (2010).

the government of a member state or any other body. The central bank has to be a separate body from other government bodies. Thus, at a national level it should be independent from the government and the parliament while at the EU level it has to be independent from the EU institutions and other organizations. We value it at 1 point.

*Alternative 2* concerns ‘dependence upon instructions or possible influences’, and it is valued at 0.5 points. Even in the case of 8 SEE NCBs that we analyse here, such alternative does not exist. However, we can consider it a possible one. It happens when the NCB though dependent on instructions, it does participate in the monetary policy formulation process.

*Alternative 3* is related to the case when ‘the central bank does not formulate different policies’ and it is valued at 0 points. It is assumed that the NCB does not participate in the monetary policy formulation process.

Considering all the possible options that are reflected in the above-mentioned criteria and alternatives, three weights are proposed to calculate institutional CBI: 50% for the first criterion on ‘the formulation and execution of monetary policy’; 25% for the second criterion on ‘CB independence to formulate and execute other policies (the secondary one)’; and 25 % for the ‘level of CB dependence upon instructions or other possible influences’ (see Tables 3 and 4 in the appendix).

### **3.3 Personal CBI: the Eurozone Index**

The degree of personal independence is related to the nomination and dismissal of the Governor and the members of the central bank’s decision making bodies. It can be analysed in relation to four main issues: the term of office; professional qualifications; political affiliations; and collegiality.<sup>13</sup>

Article 14.2 of the Statute of the ESCB states that central bank laws must provide for a minimum term of office of five years for the Governor in an attempt to protect him against an arbitrary dismissal. The Governor may be relieved of his duties only if he no longer fulfills the conditions required for the performance of his duties or if he has been

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<sup>13</sup> Bini Smaghi (2007).

guilty of serious misconduct. The possibility of recourse to the European Court of Justice is foreseen against any abuse of this provision. The Statute of the ESCB states that: ‘the President, the Vice-President and the other members of the ECB Executive Board shall be appointed from among persons of recognized standing and professional experience in monetary or banking matters’.

An important requirement is the absence of conflict of interest between the duties related to the NCB decision making bodies (and also in relation to the ECB for national central bank Governors) and other functions. A collegial decision making body composed of several members is more likely to resist external pressures and partisan behavior.<sup>14</sup> Personal CB independence is also related to the legal status and the composition of the highest ranked decision making bodies. Here, eleven criteria are proposed for calculating Personal CBI following the same methodology applied to the ‘Eurozone Indices’. All these criteria are related to the central bank’s highest decision-making bodies.

It is important that the Treaty and the Statute nominating procedures are determined only for the ECB’s Executive Board, and there are no obligations for the national central bank official nominations.

Regarding the appointment of the Governor and his term of office, four criteria are proposed. Explicitly, the first criterion is related to the CB Governor’s term of office. In Article 11.2 of the Statute, the term of office for the members of the ECB Executive Board is set at eight years, which means that it is longer than any electoral cycle in Europe. Also, Article 14.2 of the Statute states that the minimum term of office required for the Governors of the NCBs is established at five years. Consequently, for this criterion six and/or nine alternatives cases are proposed respectively, as seen below.

*Six alternatives:*

- a) for the term of office within the limits of the EU, i.e. from 5 to 8 years (points are equal to the value calculated proportionally)
- b) longer than 8 years; it is valued at 0.5 points
- c) shorter than 4 years; it is valued at 0 points.

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<sup>14</sup> Bini Smaghi (2007).

The term of office that is less than 4 year often coincides with government's term of office and thus implies dependence on the respective government.

*Nine alternatives:*

- a) the term of office is from 1 to 8 years; the proportional formula is used (points proposed are equal with the value resulted from the calculations)
- b) longer than 8 years; a value of 0.5 points is given

To calculate the values of personal independence an optional formula is used taking into consideration the rationale that a term of office longer than 8 years is considered long enough while a term of office shorter than 5 years as too short.

The formula used in the case of nine alternatives changes in accordance to the term limits, i.e. (i) if the legislative term of office is longer than 8 years, the independence value is equal to 0.5 points; (ii) if the legislative term of office is shorter than 8 years, the independence value equals the number of terms (after the NCB legislation) x 1 point (the ECB legislation)/8 years (of the ECB legislation) (see Box 1 in the appendix).

The formula used in the case of six alternatives changes in accordance to the determined limits, i.e. (i) if the NCB legislative term of office is longer than 8 years, the independence coefficient equals to 0.5 points; (ii) if the legislative term is from 5 to 8 years, the independence coefficient equals the number of terms (after the NCB legislation) x 1 point (the ECB legislation)/8 years (of the ECB legislation); (iii) if the legislative term is less than 4 years, the independence coefficient equals to 0 points. This is the case when the governor is dependent upon the government. Therefore, the duration of the term of office of the central bank governor must be longer than the electoral one in an effort to limit potential political influences (see Box 2 in the appendix).

The second criterion taken into consideration for measuring personal independence is related to the 'possibilities to reappoint a CB governor'. The ECB Statute does not contain any specific rule on the reappointment of the NCB governors and this is explained by the sovereignty of the member states. On the other side, the Statute specifies clearly that the ECB Executive Board members 'may not be reappointed' because such a practice may decrease CBI.

Considering that there are no limits on governor's reappointment in the member states, this however may not affect CBI negatively. Lack of rule in this area is related to the central bank sovereignty. For that reason, it is more realistic to support that the reappointment of the central bank top officials, including governors, decreases central bank personal independence. Based on that thought, four possible alternatives are proposed:

*Alternative 1* suggests a valuation of 1 point in the case when legislation dictates that 'CB governor's reappointment is not allowed'. This is close to the Treaty and the Statute respective clauses for the members of the ECB's Executive Board.

*Alternative 2* is the case when CB law determines that 'only one reappointment is possible'. It is valued at 0.66 points since it limits reappointments.

*Alternative 3* refers to the case that CB law has 'no comments on this issue'. The value given is 0.33 points.

*Alternative 4* is the situation where 'reappointments with no limits are specified by law'. It is valued at 0 points since 'the possibility of the reappointment of the top officials is generally seen as decreasing the level of CBI'.

Summing up, the alternatives proposed so far could be also seen from another point of view. Since there are no rules for the governor's reappointment in the Treaty or the Statute for the euro area member states, it might be considered favourably in the sense that there is no any reappointment rule laid down leading to a valuation of 1. However, in fact, the lack of rule is related to the autonomy of the member states in appointing their CB governors, and not to the idea that reappointment is a positive attribute *per se*. This suggests that our approach to valuing the personal independence index for the governor's reappointment is correct. Thus, the first alternative of calculating personal CBI can be considered acceptable. Indeed, the main problem is that in many countries the reference period is considerably shorter than the term of office for the central bank governor. That means that effective independence is lower, chiefly because of the political pressure.

The third criterion proposed is related to ‘who proposes the governor’s appointment’. Regarding the proposals and appointment procedures for the governors of the CB member states, there are concrete rules in the Treaty and the Statute to respect NCB sovereignty. However, the articles in the Treaty and the Statute defining the appointment procedure for the members of the ECB’s Executive Board are not comparable to the appointment of the NCB officials. Here, five alternatives are proposed, i.e.

*Alternative 1* is valued at 1 point in the case that ‘the Governor’s appointment is proposed by the CB board’. This is considered as generating the highest level of central bank independence.

*Alternative 2* is when ‘the Governor’s appointment is proposed by the Parliament’. The personal independence level is valued at 0.75 points since the members of the parliament are broadly considered the representatives of the public. Hence, this implies that there is a broad representation although the final choice will be taken by the majority of the parliament.

*Alternative 3* is the case that ‘the Governor’s appointment is proposed by the parliamentary committees’. The personal independence level is therefore valued at 0.5 points, because the parliamentary committees are representatives of the parliamentary various groups. This implies a lower level of independence.

Contrary to 3, *Alternative 4* is when ‘the Governor’s appointment is proposed by the State President’. The state president represents people’s interests in general; this would work to increase independence. However, since appointment is the responsibility of one individual, it is easier to exert influence on the process compared to the case when the appointment is the sole responsibility of the parliament or a parliamentary committee. It is thus valued at 0.25 points and is considered less independent.

*Alternative 5* is when ‘the Governor’s appointment is proposed by the Cabinet’. In this case, there are no limits on the government regarding the day of the appointment. Limits on this would enhance the level of CBI. The valuation given is 0 points because it is considered as dependent upon the government.

The fourth criterion is related to ‘who nominates the governor’. Some limits should be placed on the government’s influence on the nomination of the top CB officials. This would thus enhance CB personal independence. This is because it is better to divide the responsibility of the nomination between the government and the president. Even for this criterion, the Treaty and the ECB Statute have not defined explicit rules for the nomination of the top officials of the NCB of the ESCB. There are nomination procedure rules only for the ECB members of the Executive Board; this again is related to the autonomy of the NCBs. Three alternatives are proposed, but they can be easily expanded to four or more, i.e.

*Alternative 1* is proposed when ‘the CB Governor is appointed by the CB Board members’. This is considered the highest level of personal independence and thus is valued at 1 point.

*Alternative 2* is when ‘the CB Governor is appointed by law by the Parliament’. This case is considered modest because the parliament broadly represents people’s interests. However, it cannot be considered as total CB independence and therefore it is valued lower, at 0.5 points.

*Alternative 3* is the case when ‘the CB Governor is appointed by the Cabinet’. This case is considered the lowest level of personal independence and thus it is valued at 0 points.

As we mentioned before, there are eleven criteria which explain the level of CB personal independence. The first four criteria are related to the CB governor appointments, the term of office, reappointment possibilities, etc. The seven remaining criteria are related with the CB highest decision making body, appointment procedures, reappointment and dismissal procedures, the term of office, the composition in compatibility clauses, etc.

The fifth criterion relates to ‘the composition of the Governing Board’. The Treaty and the ECB Statute, as in the case of the NCB Governors, does not comment on the highest decision making body. They do have rules and regulations only for the ECB Executive Board. It is a somewhat difficult to decide on rules for the Governing Board’s composition, because every country is different and has its own particularity.

Generally speaking, a small country with an undeveloped banking system might have a simple board composition. By contrast, a country with an advanced banking system, the composition of the board might be more complicated. That said, a normal composition of the CB governing board might be: 1 governor, 1 vice governor and 4-5 board members. This is similar to the structure of the ECB Executive Board: 1 governor, 1 vice governor and 4 board members. Concluding from what we said on this issue, three alternatives are proposed, even though they are more or less subjective, i.e.

*Alternative 1* is valued at 1 point for the composition of 1 Governor, 1 Vice Governor and 4-5 Board members.

*Alternative 2* is valued at 0.5 points and refers to the case when the CB Board composition exceeds the limits of the first alternative.

*Alternative 3* refers to the case when a ‘CB has no members or the members of the high decision bodies in the government are CB board members too’. In the real world, this case does not exist; however, for the sake of completeness, it is valued at 0 points.

The sixth criterion is based on ‘the length of term of office for the CB Board’. The reasoning used is similar to that of the term of office for the CB Governors. Again, there are no rules in either the Treaty or the ECB Statute. So, following the same rationale as used above, six or nine alternatives can be proposed.

*Six alternatives:*

- d) for a NCB Board’s term of office within the limits laid down by the EU, that is from 5-8 years, points are equal to the value calculated proportionally, as before
- e) for a NCB Board’s term of office longer than 8 years, a value of 0.5 points is given
- f) in the case that the NCB board’s term of office is less than 4 years, a value of 0 points is given. Terms under 4 years are likely to coincide with a government term, which implies strong political dependence.

The formulae used in nine alternatives proposed are optional meaning that they change in respect to the term of office limits:

- c) when the NCB board's term of office is from 1 to 8 years, the proportional formula is used (points proposed are equal to the value resulting from the calculations)
- d) when the NCB board's term of office is longer than 8 years, a value of 0.5 points is set.

To calculate values of personal independence, an optional formula is applied, taking into consideration the idea that a term of office longer than 8 years is considered excessively sufficient whereas a term of office less than 5 years as insufficient. Explicitly, the formula used in the case of nine alternatives changes in accordance with the term limits, namely (i) if the legislative term of office for the NCB board members lasts more than 8 years, the independence value equals to 0.5 points; (ii) if the legislative term of office is less than 8 years, the independence value equals the number of terms (after the NCB legislation) x 1 point (the ECB legislation)/8 years (of the ECB legislation) (see Box 3 in the appendix).

The formula used in the case of 6 alternatives changes in accordance to the determined limits, namely (i) if the legislative term of office for the NCB Board is longer than 8 years, the independence value equals to 0.5 points; (ii) if the legislative term of office for the NCB Board lasts from 5 to 8 years, the independence value equals the number of terms (after the NCB legislation) x 1 point (the ECB legislation)/8 years (of the ECB legislation); (iii) if the legislative term of office is less than 4 years, the independence value equals to 0 points (see Box 4 in the appendix).

The seventh criterion is related to 'the CB board members reappointment possibilities'. The ECB Statute does not contain any specific rule on the reappointment of the NCB board members because of the sovereignty of the member states. However, for the sake of CBI, the Statute explicitly specifies that the ECB Executive Board members cannot be reappointed since the length of the initial term of office is defined *a priori*, i.e. 5-8 years. In line with the criterion relating to the governor's reappointment, this criterion is analysed in four alternatives:

*Alternative 1* is valued at 1 point in the case when it is defined by law that ‘the CB board members reappointment is not allowed’. This is close to the Treaty and the Statute respective clause for the members of the ECB’s Executive Board.

*Alternative 2* is the case when the CB law determines that ‘only one reappointment is possible for the CB board members’. It is valued at 0.66 points, because it entails limits by law regarding the frequency of the reappointment.

*Alternative 3* allows for the possibility that the CB law has ‘no comments on this issue’. The value assigned to this case is 0.33 points.

*Alternative 4* is the case when ‘reappointments with no limits are specified by law for the NCB Board members’. It is valued at 0 points.

The eighth criterion is associated with ‘who proposes the member board appointments’. Again, we use the specific rules laid down by the Treaty and the Statute describing the appointment procedures for the members of the ECB’s Executive Board as a benchmark, since there are no rules regarding the NCBs. Five alternatives are thus proposed:

*Alternative 1* is valued at 1 point when ‘vice governors are proposed by the NCB governor’. In this case the governor, who is already independent, enjoys an even greater degree of independence and his proposal will be unbiased politically. Proposed candidates are supposed to be banking system experts, with high professional knowledge concerning the NCB objectives.

*Alternative 2* concerns the case when ‘the NCB board members are proposed by the Parliamentary Committee’. It is valued at 0.75 points along the lines argued above for the appointment of the governor.

*Alternative 3* is when ‘the NCB board members are proposed by the CB Governor and the State President’. It is valued at 0.5 points. Whilst the Governor and the President are considered to be independent and represent the broad public interests for implementing a successful monetary policy and

ensuring financial stability, as individuals, however, there is always the risk that they could be susceptible to outside pressures.

*Alternative 4* is the case when ‘the NCB board is proposed from the Parliament, the Cabinet and the Supervisory Council’. The participation of the Cabinet in the decision making process increases the dependence of the central bank on the government and may lead to conflicts. For example, the government may seek to promote economic growth and reduce unemployment by asking for direct credit by the CB. This can influence negatively the ability of the CB to achieve its primary objective. Hence, the appointment by the Cabinet can weaken independence. The value given is 0.25 points.

*Alternative 5* occurs when ‘all board members are proposed by the Cabinet’. It is supposed that some limits are necessary to be institutionally set. Without such limits, the level of independence would be lower and the CB objectives might be at risk. Hence, this alternative is valued at 0 points.

The ninth criterion is related to the issue ‘who nominates the NCB board members’. Again, the Treaty and the ECB Statute have not set any rules for the top officials of the NCB of the ESCB. There are rules only for the ECB members of the Executive Board. Five alternatives are proposed:

*Alternative 1* refers to the case when ‘some CB board members are appointed by the NCB Council’. This is considered the highest level of personal independence and thus is valued at 1 point.

*Alternative 2* is when ‘the CB board is appointed by the Parliament’. It is valued at 0.75 points.

*Alternative 3* is when ‘the CB board members are appointed by the Parliament and the State President’. It is valued at 0.5 points.

*Alternative 4* is when ‘the CB board members are appointed by the State President’. It is valued at 0.25 points.

*Alternative 5* is the situation when ‘the CB board members are appointed by the Cabinet’. It is valued at 0 points.

The tenth criterion is related to ‘the governor and central bank board members dismissal situations’. According to Article 14.2 of the Statute, a national central bank governor may only be dismissed for the following reasons: (i) if he no longer fulfills the conditions required for the performance of his duties; or (ii) if he has been guilty of serious misconduct. These rules are obligatory even for the NCBs in the euro area countries. In SEE countries, there are many cases where dismissal from a high decision making body is possible:

*Alternative 1* occurs when the options stated by the ECB Statute are ‘bad performance of his duties, or if he no longer fulfills the conditions required for the performance of his duties, or if he has been guilty of serious misconduct’. This alternative is consistent with the ECB criteria and is valued at 1 point. It is also considered complete and concise with common definitions, and it does not interfere in particular dismissal options. This can be considered favourable to CB independence.

*Alternative 2* is valued at 0.66 points. Dismissal rules are closely related to Article 11.4 of the Statute, i.e criminal act; serious misconduct or lack of moral and professional integrity according to the Council; inability to perform functions for more than 6 months; false statements related; illness; conditions no longer fulfilled, such as bankruptcy proceeding pending; being an ex member of a managing board, or an ex supervisor of a company which went bankrupt.

*Alternative 3* is valued at 0.33 points. Dismissal rules for the CB high decision body are as follows: bankruptcy; personal misconduct; inability to perform; serious misconduct; absence from 2 SC meetings; illness; false statements.

The reasoning behind these rankings is that lower values are proposed in situations when the CB law is not concise. In other words, it entails many secondary or unnecessary criteria. Thus, dismissal rules related to the absence from meetings and false declarations leave room for various interpretations. On the other hand, detailed rules can be represented in various regulations, for example in penal or civil code, the overlap of the official dismissal criterion, and can create the context within the high decision making

body fills risky and under pressure. This case is associated with a low level of independence.

*Alternative 4* includes the case that ‘the CB legislation does not provide criteria for the CB Board dismissal’. This is valued at 0 point. However, in practice, no SEE central bank resembles such a case.

The eleventh criterion used refers to the CB legislative articles on ‘incompatibility clauses for the top CB officials’. To prevent potential conflicts, some clauses for the top central bank officials are recommended. As in other cases, because of NCB sovereignty, neither the Treaty nor the Statute, provide any incompatibility clauses for the NCB top officials. They do, however, provide such rules for the ECB Executive Board members (see Article 11.1 of the Statute). According to this article, ‘the ECB Executive Board members shall perform their duties on a full-time basis and no member shall engage in any occupation, whether gainful or not, unless exemption is exceptionally granted by the Governing Council’.

*Alternative 1* is valued at 1 point when the NCB top officials are subject to the same rules governing the ECB Executive Board members. See Article 11.1 of the Statute above. A situation where a CB’s top official has interests outside the CB will create potential conflicts that will reduce independence.

*Alternative 2* is valued at 0.66 points. It regards the incompatibility clauses as follows:

- a) The top official’s employment is incompatible with the appointment or the election in other positions such as presidency, parliament, constitutional court, government
- b) the NCB members are incompatible with *inter alia* party membership or any political affiliation
- c) council membership is incompatible with ownership or management position in commercial banks

*Alternative 3* is valued at 0.33 points and includes incompatibility clauses for the top NCB officials such as the incompatibility of the appointment or election

or membership in institutions such as local government, trade unions, commercial bank management. The members that are net debtors to a bank or a criminal sentence is pending are also considered incompatible. This alternative is judged to take a lower value.

*Alternative 4* occurs when ‘NCB top official’s incompatibility clauses do not exist’. This case is considered quite risky for CB independence and thus is valued at 0 points.

For measuring personal independence eleven criteria are proposed and, as a consequence, eleven weighted coefficients are proposed too. With so many criteria, it was difficult to determine the weighted coefficients. For that reason, two options are proposed:

*Option I.* All criteria are considered important for personal independence and hence each assumes a weight of 10% with the exception of the ‘composition’ and the ‘incompatibility clauses’ criteria for the NCB Governing Board that are weighted 5%. This is because the Governing Board ‘composition’ depends on the level of the country’s development, the performance of the domestic banking system, etc.

*Option II.* The ECB’s criteria are considered more important than others. The pre-accession and the Eurosystem requirements related to the NCB personal independence are given much higher weights (see Tables 5 and 6 in the appendix).

Which of the two options will be eventually adopted will be decided by general consensus.

### **3.4 Financial and budgetary CBI: the ‘Eurozone Index’**

To protect central bank independence, explicit provisions are foreseen in the Treaty and the Stability and Growth Pact relating to the monetary financing of budget deficits. The monetary financing budget deficits prohibition in Article 101 of the Treaty is a legal precondition for joining the EU and the euro, and is regularly assessed in the ECB’s convergence reports.

As Bini Smaghi (2007) has noted:

Four aspects of financial independence, namely the right to determine its own budget, the application of central bank specific accounting rules, clear provisions on the distribution of profits, and clearly defined financial liability for supervisory authorities are all particularly relevant in this respect, and some of them have only been refined quite recently in some ECB legal opinions. These are the features of financial independence where national central banks are most vulnerable to outside influence. In the euro area and the European Union, the Member States should not put their national central banks in a position where they have insufficient financial resources to carry out their ESCB - or the Eurosystem - related tasks. Moreover, the principle of financial independence implies that a national central bank must have sufficient means not only to perform ESCB-related tasks but also its own national tasks (e.g. financing its administration and own operations). The ECB noted that the obligation of the Member States to ensure the independence of their central banks puts them in an exceptional position, since it obliges the Member States to keep the assessment of the level of financial resources and the management of the capital of the national central banks at arm's length. The national central bank should not be dependent for its finances on the government, the parliament or any other third party.

Based on these arguments, the final Eurozone Index proposed here is the Financial and Budgetary CBI index. The ECB's definition of financial independence refers to NCB's budgetary independence including the prohibition of money financing. To calculate the Financial and Budgetary CBI based on the Treaty and the Statute, seven independence criteria are proposed. The methodology used for measuring CBI is focused on two main areas: first, the limits on government lending and, second, budgetary CBI. For the first area, two main criteria are proposed: (i) direct credit prohibitions/limitations and (ii) indirect credit prohibitions/limitations. For the second area, five main criteria are proposed: (i) ownership of budget and capital; (ii) management of the NCB budget; (iii) NCB profit allocation; (iv) NCB residuals to statutory reserves and (v) coverage of potential losses.

Government pressure on the central bank is always present, especially in times of difficulty or during periods of fiscal financial crises. If the CB is legally allowed to finance the government, it would soon lead to debt monetization and a resurfacing of inflation pressures. For this reason, it is important lending to the government to be

prohibited by law. This would enhance central bank independence and contribute to price stability.

### **3.4.1 Financial CB independence**

The first criterion proposed to measure Financial CBI is related to ‘prohibitions/limitations of direct credit to the Government’.

*Alternative 1* is in line with Article 101(1) of the Treaty, as well as Article 21.1 of the Statute that state that ‘overdrafts or any other type of credit facility with the ECB, or with the NCBs in favour of the community institutions, or bodies, central government, regional, local or other public authorities, other bodies governed by public law, or public undertakings of the Member States shall be prohibited, as shall the purchase directly from them by the ECB, or the NCB’s debt instruments’. Representing therefore the highest level of CB independence this case is valued at 1 point.

*Alternative 2* is when ‘direct credit is prohibited; however it is allowed under certain conditions’. It is not a total prohibition, which guarantees CB independence across all contingencies, so it is valued at 0.50 points. Compared to other CBI indices such as Cukierman’s (1992) and Cukierman’s *et al* (1992) indices or Economic Independence Index developed by Grilli, Masciandaro and Tabellini (1991), we can find more detailed alternatives in relation to the type of limitations, as, for example, the credit time limit, the sum limit, interest rates, credit guarantees, etc. Of course, this makes the Financial and Budgetary CBI index more accurate. According, however, to Article 116 of the Treaty, a Stage Two requirement for a country seeking to join the euro area is ‘the prohibition of money financing and privileged accesses, not selecting or limiting them’. So, any clause which permits direct credit is considered to jeopardize the NCB's independence.

*Alternative 3* is when ‘there are no provisions on direct credit to the Government’. This is considered a serious risk to the primary objective of the NCB and its independence, and is valued at 0 points. In the case of SEE countries, no NCB can give unlimited direct credit to the country’s government. This enhances CB

independence, but to achieve full compliance with the Treaty requirements some adjustments still have to be done.

The second criterion proposed for measuring NCB financial independence is related to ‘Government indirect credit limitations’. Indirect credit can take various types. For example, the CB can buy treasury bills, bonds or securities from the government and other institutions. Regarding this issue, the Treaty does not contain any prohibition of indirect credit. Related to these criteria, three alternatives are proposed:

*Alternative 1* represents the highest level of financial independence and is valued at 1 point. It is the case when ‘indirect credit to the Government is strictly prohibited’. Even in the Treaty there are no restrictions and it is thus considered favourable to NCB independence.

*Alternative 2* is when ‘there are no provisions on indirect credit to the Government’. Since the CB law does not mention this issue, it is considered 50% risky for CBI and is valued at 0.5 points. At least, there is no specific allowance for it.

*Alternative 3* is when ‘purchases of government securities in the secondary market are permitted’ and it is valued at 0 points. The value given could be considered too strict, because, even in the Treaty, there are no prohibitions of indirect credit. However, this is a factor heavily affecting financial independence.

Financial and budgetary NCB independence issues are highly interrelated. Based on the ECB, ‘...*ex ante* influence by external bodies on the NCB’s financial means is regarded as jeopardizing the NCB’s independence, while *ex post* reviews of its financial accounts may be seen as a reflection of accountability” (ECB 2006b, p37).

### **3.4.2 CB budgetary independence**

Focusing on the second area of CB budgetary independence, the first criterion of the five proposed is associated with ‘ownership of budget and capital’. The Treaty and the Statute do not contain explicit provisions on the NCB’s budgetary independence, but EMI assessments, Progress Reports and the ECB itself explain that a fully independent NCB

should be able to avail itself autonomously of the appropriate economic means to fulfill its mandate, and after the EU accession to perform its ESCB-related tasks (ECB 2008, p36). Based on that, the proposed alternatives for ‘NCB's ownership of budget and capital’ are:

*Alternative 1* occurs ‘when full capital is in NCB ownership’; it is valued at 1 point. In fact, no SEE NCB reaches this level.

*Alternative 2* is valued at 0.5 points and occurs ‘when capital is held exclusively by the state’. This is the case of limited independence; the central bank is financially dependent on the government. In all SEE countries, the NCB’s capital is state property.

*Alternative 3* is valued at 0 points and occurs ‘when the NCB capital is shareholders’ private property’. No SEE NCB belongs to this category.

The second criterion refers to ‘the NCB budget management’ and is classified in three alternatives. Following the ECB, a fully independent NCB should be able to avail itself autonomously of the appropriate economic means to fulfill its mandate and after the EU accession to perform its ESCB-related tasks (ECB 2008, p36).

*Alternative 1* is valued at 1 point and refers to the situation when ‘the NCB budget management is determined by the Board or the Supervisory Council of the bank’. Most of the SEE NCBs meet this criterion which is rated at 1 point. It is thus considered to be associated with a high level of CBI, because the NCBs can decide on their own budgets.

*Alternative 2* is valued at 0.5 points and concerns the case when ‘the NCB budget has to be approved by the Parliament’. This is ranked second after approval being required from the Board or the Supervisory Council. Budget approval from any institution other than the NCB itself reduces NCB independence.

*Alternative 3* is valued at 0 points and occurs when ‘the NCB annual budget is approved by the Cabinet’. It is ranked last, because if the NCB budget has to be

approved by the Cabinet, financial dependence on the government increases. In fact, no SEE NCB experiences such case.

The third criterion relates to ‘the NCB’s profit allocation’. As mentioned before, the Treaty and the Statute do not contain explicit provisions on the NCB’s budgetary independence, but assessments going back to the European Monetary Institute and, since the formation of the euro area, opinions of the ECB support the view that a fully independent NCB should have at its disposal the required financial means to fulfill its mandate and after EU accession to perform its ESCB-related tasks (ECB 2008, p36). Based on this view, the reasoning behind is: ‘the higher the proportion of NCB profits allocated to general reserves, the greater the NCB’s budgetary independence’. Thus, to measure budgetary independence, a profit rank is proposed, based on the profits allocated to general reserves. The formula applied is presented in Box 5 of the Appendix.

The fourth criterion is related to ‘NCB’s residual profit allocations’. The reasoning here is: ‘the higher the proportion of NCB residual profits paid to the state budget, the lower NCB’s budgetary independence’. Thus, budgetary independence is measured by a residual profit rank based on the profits allocated to the state budget. The formula applied is presented in Box 6 of the Appendix.

The fifth and last criterion used for measuring NCB budgetary independence is ‘the potential NCB loss coverage’. There are four alternatives:

*Alternative 1* is valued at 1 point and occurs when ‘NCB losses are covered by general reserves, special reserves, or by revaluation account etc’. As losses are self-financed, CBI level is higher.

*Alternative 2* is valued at 0.66 point and occurs when ‘NCB losses are covered by general reserves, special reserves and the rest by the state budget’. The involvement of the state budget in covering NCB losses lowers budgetary CBI.

*Alternative 3* is valued at 0.33 point and occurs when ‘NCB losses are covered by general reserves and the rest by the state budget’. Even though the NCB is supported by its own general reserves, there are no special reserves and hence the state budget plays a greater role.

*Alternative 4* is valued at 0 point and occurs when ‘NCB losses are covered only by the state budget’. This implies a high dependence on the state budget.

For measuring the average financial and budgetary independence criteria, the coefficient weights are used. It is assumed that direct credit to the government is considered very important for NCB independence (40%) with the other alternatives as equally less important (10%) (see Tables 7 and 8 in the appendix).

#### **4. Assessing SEE central bank independence by applying the ‘Eurozone Indices’**

We apply the above mentioned ‘Eurozone Indices’ to measure CBI for eight SEE countries, which all aspire to become members of the European Union.<sup>15</sup> For that part of the legislation relating to independence where the EU has no specific recommendations for the euro area NCBs respecting their sovereignty, the criteria developed in this paper are also used to compare the level of CBI across countries. This is because the main scope of this paper is to explain the methodology used for measuring CBI based on the various ‘Eurozone Indices’. The results of this exercise are shown in Table 9 of the appendix. As we can see, the ECB enjoys the highest level of *de jure* central independence, as expected since we use it as a benchmark in creating the ‘Eurozone indices’. In some cases, SEE NCBs do enjoy a high level of independence close to that of the ECB, while in other cases the level of independence is rather low. The results provide us not only with an overall impression of the degree of central bank independence in different countries but, most importantly, try to detect and highlight the weak points in the sample countries’ legislation.

#### **5. Advantages and disadvantages of the ‘Eurozone Indices’**

The ‘Eurozone Indices’ can serve as an objective quantitative measure of the degree independence of the central bank of those countries that aspire to be EMU members. They measure explicitly the level of central bank independence that has been achieved so

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<sup>15</sup> This section heavily draws upon a longer paper that presents in detail the calculations applied.

far by making the fifth convergence criterium (Article 121) a quantitative one. Moreover, they highlight the areas where progress is still needed.

However, some caveats are in order. As with other qualitative indicators which are converted into quantitative ones, the 'Eurozone Indices' sometimes contain too much subjective judgements. Areas where subjectivity can come in, include the determination of the weights the values assigned to different cases the formulas applied and in some cases, the various alternatives specified by the author. Nevertheless, the index created here is probably less subjective compared to others, because is based on the well-known legal requirements of the ECB. In cases where the specific criteria do not exist, the valuations used are for comparative purposes only.

## **6. Conclusions**

The proposed 'Eurozone Indices' could be of practical use for the euro area in developing quantitative measures for both the EU countries and aspiring ones. The proposed CBI 'Eurozone Indices' can be regarded as a quantitative criterium, which can accompany the four main Maastricht convergence criteria. Indices can be also used for measuring and comparing the level of CBI within the member countries and aspiring ones. These indices can be also used by countries which intend to have a high level of CBI. For example, these 'Eurozone Indices' are used for measuring the level of CBI of SEE countries and comparing it with the EMU respective criterion. Whlist there is an element of subjectivity in the creation of any index, those created here may contain little subjective judgement since they are strongly founded on the well determined legal base of the ECB relating to the requirements of CBI.

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## Appendix

**Table 1. Methodology for Functional CBI – Eurozone Index**

Functional Independence criterion & respective alternatives	Proposed valuation	Proposed Weights	
	<i>In points</i>	Option I	Option II
<b>I. The primary objective of the central bank:</b>		<b>70%</b>	<b>80%</b>
1. to maintain price stability	<b>1.00</b>		
2. to maintain domestic currency stability	<b>0.66</b>		
3. to maintain financial stability	<b>0.33</b>		
4. no specifications in law on the primary objective	<b>0.00</b>		
<b>II. The secondary objectives of central bank:</b>		<b>30%</b>	<b>20%</b>
1. to support the general economic policies in the Community, without prejudice of price stability objective	<b>1.00</b>		
2. exchange rate stability	<b>0.50</b>		
3. no secondary objectives for a central bank	<b>0.00</b>		

**Table 2. Functional CBI –“Eurozone Indices” in SEE countries**

SEE CBs ranked by the level of functional independence	
ECB	1.00
Croatia	1.00
FYROM	1.00
Romania	1.00
Albania	0.85
Bulgaria	0.76
Bosnia Herzegovina	0.61
Serbia	0.53
Montenegro	-

Source: Index calculations are based on “Eurozone Indices” (A.Pisha 2008) and in central bank independence legislation till 2006 following Sandra Dvorsky CBI in SEE with a view to EU Integration-FOCUS 1/07.

Note: Table 2 contains the results of calculations of Functional independence for SEE countries, based on Eurozone Indices (A.Pisha 2008),

**Table 3. Methodology for Institutional CBI –Eurozone Index**

<b>Institutional Independence criterion &amp; respective alternatives</b>	<b>Proposed valuation <i>in points</i></b>	<b>Proposed weights</b>
<b>I. CB monetary policy, formulation and execution</b>		<b>50%</b>
1. central bank formulate and execute independently its monetary policy	<b>1.00</b>	
2. central bank formulate and execute its monetary policy, but in case of inconsistency, parliament has to decide for it	<b>0.66</b>	
3. CB determine and execute exchange rate policy	<b>0.33</b>	
4. CB do not formulate by itself monetary policy, but it is responsible for it	<b>0.00</b>	
<b>II. CB independence, to formulate and execute other policies (secondary one)”</b>		<b>25%</b>
1. “CB independence, to formulate and execute other policies ( <i>secondary one</i> )	<b>1.00</b>	
2. “central bank does not formulate secondary policies	<b>0.66</b>	
3. “Central bank establish and implement the monetary and exchange rate policies	<b>0.33</b>	
4. CB determine exchange rate regime with the consent of the Government/Parliament	<b>0.00</b>	
<b>III. Level of CB dependence, or other possible influences</b>		<b>25%</b>
1. freedom from instructions or other possible influences	<b>1.00</b>	
2. dependence on instructions or other possible influences	<b>0.50</b>	
3. CB does not formulate different policy	<b>0.00</b>	

**Table 4. Institutional CBI –“Eurozone Indices” in SEE countries**

<b>SEE CBs ranked by the level of institutional independence</b>	
ECB	1.00
Albania	0.92
Croatia	0.92
Romania	0.92
FYROM	0.66
Serbia	0.66
Bosnia Herzegovina	0.50
Bulgaria	0.50
Montenegro	-

Source: Index calculations are based on “Eurozone Indices” (A.Pisha 2008) and in central bank independence legislation till 2006 following Sandra Dvorsky CBI in SEE with a view to EU Integration-FOCUS 1/07.

Note: Table 4 contains the results of calculations of institutional independence for SEE countries, based on the Eurozone Indices (A.Pisha 2008),

**Table 5: Methodology for Personal CBI - Eurozone index**

Personal Independence criteria & respective alternatives	Proposed valuation	Proposed Weights	
	<i>In points</i>	Option I	Option II
<b>I. NCB Governor term of office:</b>			
<i>1. 6 alternatives proposed:</i>		<b>10 %</b>	<b>10 %</b>
a) term of Governor within the limits of EU, from 5-8 years (points are calculated proportionally): <ul style="list-style-type: none"> <li>▪ 5 years <b>0.63</b></li> <li>▪ 6 years <b>0.75</b></li> <li>▪ 7 years <b>0.88</b></li> <li>▪ 8 years <b>1.00</b></li> </ul>			
b) term of Governor more than 8 years	<b>0.50</b>		
c) term of Governor less than 4 years	<b>0.00</b>		
<i>2. or 9 alternatives proposed :</i>		<b>10 %</b>	<b>10 %</b>
a) term of Governor from 1 to 8 years (points are calculated proportionally): <ul style="list-style-type: none"> <li>▪ 1 year <b>0.13</b></li> <li>▪ 2 years <b>0.25</b></li> <li>▪ 3 years <b>0.38</b></li> <li>▪ 4 years <b>0.50</b></li> <li>▪ 5 years <b>0.63</b></li> <li>▪ 6 years <b>0.75</b></li> <li>▪ 7 years <b>0.88</b></li> <li>▪ 8 years <b>1.00</b></li> </ul>			
b) term of Governor for more than 8 years	<b>0.50</b>		
<b>II. CB governor reappointment possibilities:</b>		<b>10%</b>	<b>5 %</b>
1. NCB Governor reappointment is not allowed	<b>1.00</b>		
2. Only one reappointment is possible for NCB Governor	<b>0.66</b>		
3. No comments on this issue	<b>0.33</b>		
4. Reappointments with no limit are specified in law for NCB Governor	<b>0.00</b>		
<b>Table 5: Methodology for Personal CBI - Eurozone index continued</b>			
<b>III. Who proposes the governor's appointment:</b>		<b>10%</b>	<b>5 %</b>
1. NCB Governor appointment is proposed by CB board	<b>1.00</b>		
2. NCB Governor appointment is proposed by Parliament	<b>0.75</b>		

**Table 5. continued**

3. NCB Governor appointment is proposed by Parliamentary Committees	<b>0.50</b>		
4. NCB Governor appointment is proposed by State President	<b>0.25</b>		
5. NCB Governor appointment is proposed by Cabinet	<b>0.00</b>		
<b>IV. Who nominates the NCB Governor:</b>		<b>10%</b>	<b>5 %</b>
1. NCB Governor is appointed by NCB Board members	<b>1.00</b>		
2. NCB Governor is appointed by Parliament	<b>0.50</b>		
3. NCB Governor is appointed by Cabinet	<b>0.00</b>		
<b>V. CB composition of governing Board:</b>		<b>5 %</b>	<b>5 %</b>
1. NCB governing Board composition: ( <i>1 governor; 1 vice governor; 4-5 Board members</i> )	<b>1.00</b>		
2. NCB board composition exceeds the first alternative limits	<b>0.50</b>		
3. NCB board has no members, or are also members of government	<b>0.00</b>		
<b>VI. NCB Board length of term of office:</b>			
<b>1. In the case of 6 alternatives :</b>		<b>10 %</b>	<b>10 %</b>
a) terms of NCB Board within the limits of EU, from 5-8 years, (points are calculated proportionally):			
▪ 5 years	<b>0.63</b>		
▪ 6 years	<b>0.75</b>		
▪ 7 years	<b>0.88</b>		
▪ 8 years	<b>1.00</b>		
b) terms of NCB Board, are more than 8 years	<b>0.50</b>		
c) terms of NCB Board are less than 4 years	<b>0.00</b>		
<b>Table 5: Methodology for Personal CBI - Eurozone index continued</b>			
<b>2. or 9 alternatives proposed :</b>		<b>10%</b>	<b>10 %</b>
a) NCB board terms are from 1 to 8 years (points are calculated proportionally):			
▪ 1 year	<b>0.13</b>		
▪ 2 years	<b>0.25</b>		
▪ 3 years	<b>0.38</b>		
▪ 4 years	<b>0.50</b>		
▪ 5 years	<b>0.63</b>		
▪ 6 years	<b>0.75</b>		
▪ 7 years	<b>0.88</b>		
▪ 8 years	<b>1.00</b>		
b) when terms are more than 8 years	<b>0.50</b>		
<b>VII. Reappointment possibilities for NCB members Board :</b>		<b>10%</b>	<b>5 %</b>

**Table 5. continued**

1. The NCB board members reappointment is not allowed	<b>1.00</b>		
2. Only one reappointment is possible for NCB board members	<b>0.66</b>		
3. No reference to this issue	<b>0.33</b>		
4. Reappointments with no limit NCB Board members	<b>0.00</b>		
<b>VIII. Who proposes the member NCB Board appointments:</b>		<b>10 %</b>	<b>5 %</b>
1. Vice governors are proposed by NCB Governor	<b>1.00</b>		
2. NCB board members are proposed by Parliamentary Committee	<b>0.75</b>		
3. NCB board members are proposed by NCB Governor and State President	<b>0.50</b>		
4. NCB board is proposed by Parliament, the Cabinet and the Supervisory Council	<b>0.25</b>		
5. All board members are proposed by Cabinet	<b>0.00</b>		
<b>IX. Who nominate the NCB board members:</b>		<b>10 %</b>	<b>5 %</b>
1. CB Board members appointed by NCB Council	<b>1.00</b>		
2. NCB Board members appointed by Parliament	<b>0.75</b>		
3. NCB Board members appointed by Parliament and State President	<b>0.50</b>		
4. NCB Board members appointed by President	<b>0.25</b>		
<b>Table 5:</b> Methodology for Personal CBI - Eurozone index continued			
5. NCB Board members appointed by Cabinet	<b>0.00</b>		
<b>X. Governor and NCB Board members' dismissal options:</b>		<b>10%</b>	<b>25 %</b>
1. NCB Board member no longer fulfills the conditions for performance of his duties, or has been guilty of serious misconduct	<b>1.00</b>		
2. NCB Board members are dismissed for: <ul style="list-style-type: none"> <li>▪ serious misconduct</li> <li>▪ lack of professional integrity</li> <li>▪ inability, to perform his/her functions for more than 6 months</li> <li>▪ criminal act</li> <li>▪ bankruptcy</li> </ul>	<b>0.66</b>		

**Table 5. continued**

<p>3. Dismissing rules for CB high decision body are as follows:</p> <ul style="list-style-type: none"> <li>▪ serious misconduct</li> <li>▪ inability to perform</li> <li>▪ illness</li> <li>▪ bankruptcy</li> <li>▪ false statements</li> <li>▪ unjustified absence from 2 SC meetings</li> </ul>	<b>0.33</b>		
<p>4. CB legislation has no criterion for board dismissal</p>	<b>0.00</b>		
<b>XI. Incompatibility clauses for top NCB official</b>		<b>5 %</b>	<b>20 %</b>
<p>1. NCB top official has to perform their duties on a full time basis and must not engage in any other occupation, whether gainful or not, unless exemption is exceptionally granted by the NCB Governing Board</p>	<b>1.00</b>		
<p>2. NCB top official are incompatible with:</p> <ul style="list-style-type: none"> <li>▪ Appointment or election to presidency; parliament; constitutional court; government</li> <li>▪ inter alia party membership or/ political affiliation</li> <li>▪ ownership or management position <i>in commercial banks</i>.</li> </ul>	<b>0.66</b>		
<b>Table 5: Methodology for Personal CBI - Eurozone index continued</b>			
<p>3. NCB top official are incompatible <i>with</i>: appointment/election/ membership in:</p> <ul style="list-style-type: none"> <li>▪ high institutions</li> <li>▪ local government</li> <li>▪ trade union</li> <li>▪ bank management etc.</li> </ul> <p>also are incompatible members which are:</p> <ul style="list-style-type: none"> <li>▪ net debtor of a bank status or in waiting time for criminal sentence</li> </ul>	<b>0.33</b>		
<p>4. No rules on NCB top officials incompatibility clauses</p>	<b>0.00</b>		

**Table 6: Personal CBI –“Eurozone Indices” in SEE countries**

<b>SEE CBs ranked on the level of, Personal independence - Eurozone index</b>			
<b>Option I</b>		<b>Option II</b>	
ECB	1.00	ECB	1.00
FYROM	0.65	Croatia	0.70
Bulgaria	0.64	Romania	0.68
Croatia	0.61	Bulgaria	0.67
Montenegro	0.60	FYROM	0.61
Romania	0.56	Serbia	0.58
Serbia	0.53	Montenegro	0.58
Bosnia Herzegovina	0.51	Albania	0.50
Albania	0.44	Bosnia Herzegovina	0.42

Source: Index calculations are based on “Eurozone Indices” (A.Pisha 2008) and in central bank independence legislation till 2006 following Sandra Dvorsky CBI in SEE with a view to EU Integration-FOCUS 1/07.

Note: Table 6 contains the results of calculations of Personal independence for SEE countries, based on Eurozone Indices (A.Pisha 2008):

**Table 7: Methodology for Financial and Budgetary CBI–Eurozone Index**

<b>Financial &amp; budgetary independence criteria &amp; respective alternatives</b>	<b>Proposed valuation <i>In points</i></b>	<b>Proposed weights</b>
<b>I. Prohibitions/limitations of direct credit to Government</b>		<b>40%</b>
1. Overdrafts or any other type of credit facility with the ECB, or with the NCBs in favour of Community institutions or bodies, central government, regional, local or other public authorities, other bodies governed by public law, or public undertakings of Member States shall be prohibited, as shall the purchase directly from them by the ECB, or NCBs of debt instruments.	<b>1.00</b>	
2. Direct credit is prohibited, except under certain conditions	<b>0.50</b>	
3. There are no provisions on direct credit to Government	<b>0.00</b>	
<b>II. Government indirect credit limitations</b>		<b>10%</b>
1. Indirect credit to Government is prohibited.	<b>1.00</b>	
2. There are no provisions on indirect credit to Government.	<b>0.50</b>	
3. Purchases of government securities in secondary market are permitted.	<b>0.00</b>	
<b>III. Ownership of budget &amp; capital</b>		<b>10%</b>
1. Full capital is in NCB ownership	<b>1.00</b>	
2. NCB capital held exclusively by state	<b>0.50</b>	
3. NCB capital is shareholders private property	<b>0.00</b>	
<b>IV. NCB budget management</b>		<b>10%</b>

**Table 7. continued**

1.	NCB budget management is determined by Board or Supervisory Council of the bank.	<b>1.00</b>	
2.	NCB budget is approved by Parliament	<b>0.50</b>	
3.	NCB annual budget is approved by Governing Council	<b>0.00</b>	
<b>V. NCB's profit allocation</b>			<b>10%</b>
1.	The higher NCB profit allocated to general reserves, - <b>the higher</b> NCB's budgetary independence is:		
	<i>from 11% -14% profit allocations in reserves</i>	<b>0.10</b>	
	<i>from 15% -20% profit allocations in reserves</i>	<b>0.20</b>	
	<i>from 21% -24% profit allocations in reserves</i>	<b>0.20</b>	
	<i>from 25% -30% profit allocations in reserves</i>	<b>0.30</b>	
	<i>from 31% -34% profit allocations in reserves</i>	<b>0.30</b>	
	<i>from 35% -40% profit allocations in reserves</i>	<b>0.40</b>	
	.....and so on	.....	
<b>Table 7:</b> Methodology for Financial and Budgetary CBI–Eurozone Index continued			
<b>VI. NCB's residual profit allocations</b>			<b>10%</b>
1.	The higher NCB residual profits is paid to state budget, - <b>the lower</b> NCB's budgetary independence is:		
	from 11% -14% residual profits is paid to state budget	<b>0.90</b>	
	from 15% -20% residual profits is paid to state budget	<b>0.80</b>	
	from 21% -24% residual profits is paid to state budget	<b>0.80</b>	
	from 25% -30% residual profits is paid to state budget	<b>0.70</b>	
	from 31% -34% residual profits is paid to state budget	<b>0.70</b>	
	.....and so on	.....	
<b>VII. Potential NCB loss coverage</b>			<b>10%</b>
1.	NCB losses covered by general reserves, special reserves, or by revaluation account etc	<b>1.00</b>	
2.	NCB losses covered by general reserves, special reserves, and the rest from state budget?	<b>0.66</b>	
3.	NCB losses covered by general reserves, and the rest from state budget	<b>0.33</b>	
4.	NCB losses covered only from the state budget	<b>0.00</b>	

**Table 8: Financial and Budgetary CBI –“Eurozone Indices” in SEE countries**

<b>SEE CBs ranked by the level of Financial and Budgetary Independence</b>	
ECB	1.00
FYROM	0.80
Bosnia Herzegovina	0.80
Croatia	0.80
Bulgaria	0.70
Romania	0.70
Montenegro	0.50
Albania	0.40
Serbia	0.40

Source: Index calculations are based on “Eurozone Indices” (A.Pisha 2008) and on central bank independence legislation till 2006 following Sandra Dvorsky CBI in SEE with a view to EU Integration-FOCUS 1/07.

Note: Table 8 contains the results of calculations of Financial & Budgetary independence for SEE countries, based on Eurozone Indices (A.Pisha 2008).

**Table 9: Results of measuring central bank independence of ECB and 8 SEE countries, using “Eurozone Indices”**

<b>CENTRAL BANKS:</b>	<b>CBI EUROZONE INDICES</b>				
	<b>Institutional</b>	<b>Functional</b>	<b>Personal</b>		<b>Budget &amp; Financial</b>
			<b>I Option</b>	<b>II Option</b>	
<b>ECB</b>	1.00	1.00	1.00	1.00	1.00
<b>Albania</b>	0.92	0.85	0.50	0.44	0.40
<b>Bosnia &amp; Herzeg.</b>	0.50	0.61	0.42	0.51	0.80
<b>Bulgaria</b>	0.50	0.76	0.67	0.64	0.70
<b>Croatia</b>	0.92	1.00	0.70	0.61	0.80
<b>Monte Negro</b>	-	-	0.58	0.60	0.50
<b>FYROM</b>	0.66	1.00	0.61	0.65	0.80
<b>Romania</b>	0.92	1.00	0.68	0.56	0.70
<b>Serbia</b>	0.66	0.53	0.58	0.53	0.40

Source: Index calculations are based on “Eurozone Indices” (A.Pisha 2008) and on central bank independence legislation till 2006 following Sandra Dvorsky CBI in SEE with a view to EU Integration-FOCUS 1/07.

**Box 1:** Examples to calculate personal independence based on NCB Governor's term of office (9 alternatives)

**e.g. 1** if the legislative term of office for the NCB Governor is < 8 years

8 years = 1 point → (ECB legislation)

3 years = y points → (NCB legislation)

$$y = 3 \text{ years} \times 1 \text{ point} / 8 \text{ years} = 0.38 \text{ points} \quad (1)$$

**e.g. 2** if the legislative term of office for the NCB Governor is < 8 years

8 years = 1 point → (ECB legislation)

7 years = y points → (NCB legislation)

$$y = 7 \text{ years} \times 1 \text{ point} / 8 \text{ years} = 0.88 \text{ points} \quad (2)$$

**Box 2:** Examples to calculate personal independence based on NCB Governor's term of office (6 alternatives)

**e.g. 1** if the legislative term of office for the NCB Governor is from 5 years to 8 years

8 years = 1 point → (ECB legislation)

5 years = y points → (NCB legislation)

$$y = 5 \text{ years} \times 1 \text{ point} / 8 \text{ years} = 0.63 \text{ points} \quad (3)$$

**e.g. 2** if the legislative term of office for the NCB Governor is from 5 years to 8 years

8 years = 1 point → (ECB legislation)

6 years = y points → (NCB legislation)

$$y = 6 \text{ years} \times 1 \text{ point} / 8 \text{ years} = 0.75 \text{ points} \quad (4)$$

**Box 3:** Examples to calculate personal independence based on NCB Board's term of office (*case of 9 alternatives*)

**e.g. 1** if the legislative term of office for the NCB Board is < 8 years

8 years = 1 point → (ECB legislation)

4 years = y points → (NCB legislation)

$$y = 4 \text{ years} \times 1 \text{ point} / 8 \text{ years} = 0.50 \text{ points} \quad (5)$$

**e.g. 2** if the legislative term of office for the NCB Board is < 8 years

8 years = 1 point → (ECB legislation)

6 years = y points → (NCB legislation)

$$y = 6 \text{ years} \times 1 \text{ point} / 8 \text{ years} = 0.75 \text{ points} \quad (6)$$

**Box 4:** Examples to calculate personal independence based on NCB Board's term of office (*case of 6 alternatives*)

**e.g. 1** if the legislative term of office for NCB Board is from 5 years to 8 years:

8 years = 1 point → (ECB legislation)

7 years = y points → (NCB legislation)

$$y = 7 \text{ years} \times 1 \text{ point} / 8 \text{ years} = 0.88 \text{ points} \quad (7)$$

**e.g. 2** if the legislative term of office for NCB Board is from 5 years to 8 years:

8 years = 1 point → (ECB legislation)

8 years = y points → (NCB legislation)

$$y = 8 \text{ years} \times 1 \text{ point} / 8 \text{ years} = 1 \text{ points} \quad (8)$$

**Box 5:** Formula proposed to calculate NCB budgetary independence based on general reserves and NCB profit allocation.

IF NCB profit allocation in reserves  $\geq n+5\% \Rightarrow$   
 $\Rightarrow$  NCB budgetary independence =  $n + 10\%$  (where  $n = 10\% ' 20\%; 30\% \dots 100\%$ ) (9)

IF NCB profit allocation in general reserves  $< n+5\%$   
 $\Rightarrow$  NCB budgetary independence =  $n$  (where  $n = 10\% ' 20\%; 30\% \dots 100\%$ ) (10)

**Example 1:**

IF NCB profit allocation in reserves =  $37\% \geq 30\% + 5\%$  (or  $n+5\%$ )  $\Rightarrow$   
 $\Rightarrow$  NCB budgetary independence =  $30\% + 10\% = 0.4$  points (or  $n+10\%$ )  
 (where  $n = 10\% ' 20\%; 30\% \dots 100\%$ ) (11)

**Example 2:**

IF NCB profit allocation in general reserves  $34\% < 30\% + 5\%$  (or  $n+5\%$ )  $\Rightarrow$   
 $\Rightarrow$  NBC budgetary independence =  $30\% = 0.3$  points (or  $n$ )  
 (where  $n = 10\% ' 20\%; 30\% \dots 100\%$ ) (12)

*Example results based on the above reasoning* (13)

NCB profit allocation in general reserves		NCB budgetary independence
From 10% -14%	profit allocations in reserves	0.1 points
From 15% -20%	profit allocations in reserves	0.2 points
From 21% -24%	profit allocations in reserves	0.2 points
From 25% -30%	profit allocations in reserves	0.3 points
<b>Example</b>		
82%	profit allocations in reserves	0.8 points
95%	profit allocations in reserves	1 points

**Box 6:** Formula proposed to calculate NCB budgetary independence based on NCB residual profits paid to the state budget

IF NCB % of residual profit paid to the state budget  $\geq n+5\% \Rightarrow$  (14)

$\Rightarrow$  NCB budgetary independence =  $100\% - (n+10\%)$  (where  $n = 10\%, 20\%, \dots, 100\%$ )

IF NCB % of residual profit paid to the state budget  $< n+5\%$  (15)

$\Rightarrow$  NCB budgetary independence =  $100\% - n$  (where  $n=10\%, 20, 30\% \dots 100\%$ )

**Example 1**

IF NCB % of residual profit paid to the state budget =  $48\% \geq 40\%+5\%$  (or  $n+5\%$ )  $\Rightarrow$  NCB budgetary independence =  $100\% - (40\%+10\%) = 0.5$  points or  $100\% - (n+10\%)$

(where  $n = 10\%, 20\%, 30\% \dots 100\%$ ) (16)

**Example 2**

IF NCB % of profit allocation in general reserves  $13\% < 10\% + 5\%$  (or  $n+5\%$ )  $\Rightarrow$

$\Rightarrow$  the Budgetary NCB independence =  $100\% - 10\% = 0.9$  points (or  $100\% - n$ )

(where  $n=10\%, 20\%, 30\% \dots 100\%$ ) (17)

**Example results based on the above reasoning:** (18)

NCB % of residual profit paid to the state budget	NCB budgetary independence
from 10% -14%	0.9 points
from 15% -20%	0.8 points
from 21% -24%	0.8 points
from 25% -30%	0.7 points
Examples	
82%	0.8 points
95%	0.1 points



## Discussion

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*Bank of Greece*

I found Arta Pisha's paper interesting, especially for readers following developments in the central bank independence literature and, to some extent, relevant to issues concerning the progress of EU accession countries. In this comment, I outline the key points and results found in Pisha's paper and I make a few suggestions on how she could extend this work.

In her paper, Pisha devises four indices that aim to measure the degree of independence of the central bank in countries that are currently EU members or EU accession candidates. She adopts a definition of legal central bank independence that is drawn from the literature (see Cukierman 2002), according to which independence can be summarized by four characteristics: a) functional independence, i.e. the freedom to freely manage (monetary) policy tools; b) institutional independence, i.e. the stated adoption of price stability as the single or primary policy objective; c) personal independence, i.e. procedures for the governor's appointment and term of office that promote independence from political influence; and d) financial (or "budgetary") independence, i.e. freedom of the central bank to manage its own finances. The novelty of this paper is that whereas most authors study a broader, more universal notion of central bank independence through heterogeneous country samples, this study narrows the definition to the stipulations of the Maastricht Treaty in particular and to EU members or potential members (applied to a sample of eight Southeast European countries). There has been little work focusing on legal EU requirements regarding central bank independence (see Dvorsky 2007). Moreover, this paper is a good application of how an index that measures the degree of legal central bank independence may be constructed and, unlike other indices, formulated within the framework of the Maastricht Treaty. This new index is a useful tool for analysing country progress towards EU membership, concerning legal

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central bank independence. This brings me to my first remark which is that while reading Pisha’s paper I thought that she could place greater emphasis on, and make clearer to the reader, what her own contribution to the literature is.

Before proceeding to the paper’s results let me first underline that the main constraint for the construction of indices of this type is the subjectivity that accompanies the author’s assessments at each step of the procedure. This bias may be limited through the careful interpretation by the author of the resulting values of the index and possibly then the reconsideration of some of her earlier decisions.

Turning now to the paper’s results, I will focus on their interpretation because I think that there are interesting conclusions to be drawn from this analysis which are not, however, mentioned in the paper. There are four remarks I wish to make. The first observation is that country rankings alter across the four indices. This is a desirable result as it directly implies that all four indices are complementary and indeed bring out different dimensions of central bank independence.

My second point is that the constructed indices successfully display differences among these countries, which can be justified. In the following table, I provide a simple (unweighted) average index from Pisha’s four indices in order to obtain a final ranking of the countries. I think that the author might also find it useful to summarize this measure of central bank independence from the four separate indices through a weighted-average index.

**Table 1. Country ranking regarding central bank independence according to Pisha’s results**

<i>Rank</i>	<i>Country</i>	<i>Average of four indices</i>
1	Croatia	0.83
2	Romania	0.80
3	FYROM	0.78
4	Bulgaria	0.65
5	Albania	0.65
6	Bosnia-Hercegovina	0.61
7	Monte Negro	0.55
8	Serbia	0.53

We then learn that, on average, Croatia and Romania occupy the first two places in this list and Serbia the last. This is an expected result, considering for example functional and institutional independence, as both Croatia and Romania have achieved progress and amended their central bank laws so as to clearly specify a main objective of price stability and freedom to implement monetary policy. The central bank of Serbia sticks to an additional goal of financial stability as well as price stability in its legally declared primary objectives. It is obliged to submit its monetary policy program to the Parliament and set credit growth targets according to the macro variable projections and targets set by the Parliament. Clearly further legal adjustment is needed. More importantly, the general level of central bank independence displayed in these results can broadly be associated with how close to EU integration different countries are, an indication being their progress regarding structural reforms, where again both Romania and Croatia would rank more highly (Bulgaria as well, but it loses out concerning availability of monetary policy due to its currency board regime). Therefore, the reasonable interpretation of these results is a good indication that the subjectivity bias of central bank independence indices has been limited.

Thirdly, what I find quite striking is that, according to the indices presented to us in the paper, some of the countries in the sample would rank quite highly in international terms, considering rankings in other studies, due to the focus of Pisha's definition towards the strict requirements of the Maastricht Treaty. The average value for all eight countries and across all four indices is 0.69. This might be higher than the corresponding level for some current EU members. Thus, it would be useful to see an application of Pisha's index to current EU member countries outside the region of South Eastern Europe. In a recent study, Daunfeldt and de Luna (2008) apply Cukieman's average index of central bank independence to a host of countries among which, Italy, Spain, and France attain quite low levels of independence (though their results are not directly comparable). Cukierman, Miller and Neyapti (2002) also document in their empirical study a relatively high level of central bank independence for some transition economies. They explain that unlike advanced economies, some of which drafted their central bank laws as early as in the 1980's, transition economies recently redrafted their CB independence laws within an environment of 'anti-inflation culture and an established

belief that independence contributes to lowering inflation'. As a result, transition economies which were on a fast track towards joining the EMU achieved higher levels of central bank independence.

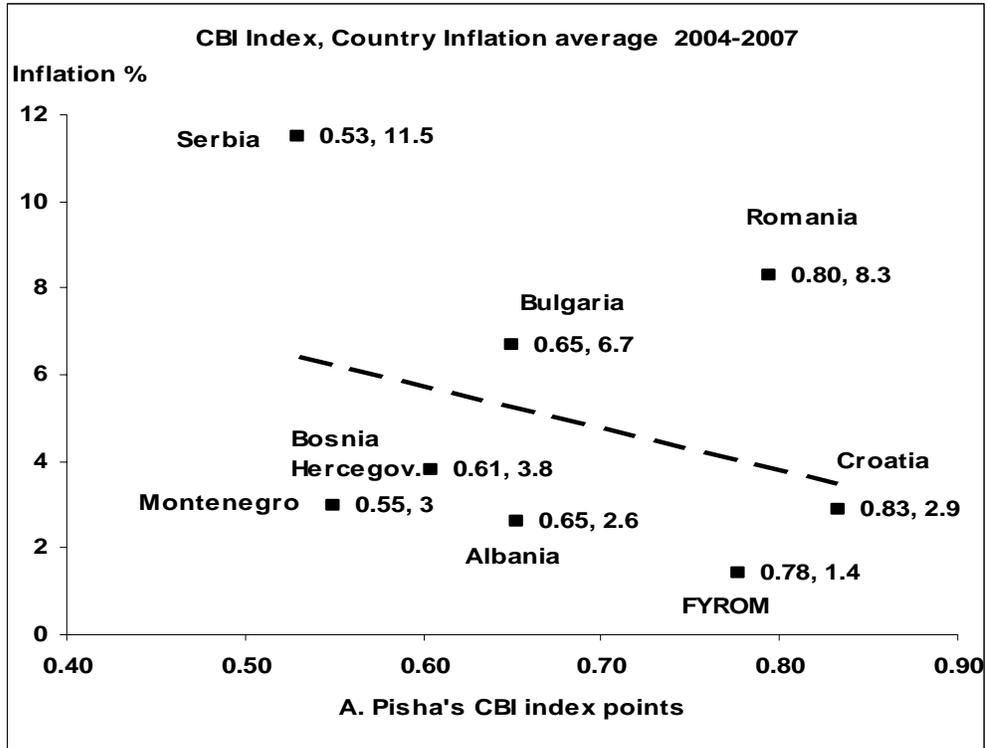
Finally, we learn that average country performance is the highest for the functional index and the lowest for the personal index, as one might expect. For example, legal provisions for dismissal of the central bank governor or board members remain inadequate in several countries in the sample (as in Dvorsky 2007, see notes). The personal index carries a more substantial weight compared to the other indices in the empirical literature because of its higher relevance to political influence. Given the low performance of the personal index, it would be interesting to see a measurement of Cukierman's 'practical' variables and examine actual against legal central bank independence by considering for example the deviation between the legal requirements for the term of office of the Governor and the actual turnover rate of governors.

Overall, these results could be extended by an application of the same four indices to selected EU member states, which would provide a further benchmark for comparison, besides that of the ECB, and would make them more comparable to other empirical studies.<sup>17</sup> Finally, although it is beyond the scope of Pisha's paper, an empirical investigation of the relationship between these indices and inflation performance in these eight countries (see the figure) against a separate group of selected EU members, in a sub-period context, could be the next step. At the same time, I should add that this relationship might be difficult to establish for Southeast European economies, given that one would need a few more (years of) observations and considering that the empirical literature is not conclusive on this matter.<sup>18</sup>

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<sup>17</sup> For example, Cukierman, Miller and Neyapti (2002) find that transition economies score quite highly against the more developed economies. Daunfeldt and de Luna (2008), in an empirical study for an OECD country sample, find low scores for some EU member and Euro Area countries according to Cukierman's average index.

<sup>18</sup> Cukierman *et al.* (2002) find that for transition economies that were on a fast track to join the EMU, a negative relationship between central bank reform and inflation can be established (Czech Republic, Poland and Hungary). Daunfeldt and de Luna (2008) conclude that for 29 OECD countries there is no evidence that central bank reforms promote price stability. Improved inflation performance was in some cases achieved even before independence was granted.



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## Special Conference Papers

**3<sup>rd</sup> South-Eastern European Economic Research Workshop**  
**Bank of Albania-Bank of Greece**  
**Athens, 19-21 November 2009**

1. Hardouvelis, Gikas, Keynote address: “The World after the Crisis: S.E.E. Challenges & Prospects”, February 2011.
2. Tanku, Altin “Another View of Money Demand and Black Market Premium Relationship: What Can They Say About Credibility”, February 2011.
3. Kota, Vasilika “The Persistence of Inflation in Albania”, including discussion by Sophia Lazaretou, February 2011.
4. Kodra, Oriela “Estimation of Weights for the Monetary Conditions Index in Albania”, including discussion by Michael Loufir, February 2011.
5. Pisha, Arta “Eurozone Indices: A New Model for Measuring Central Bank Independence”, including discussion by Eugenie Garganas, February 2011.
6. Kapopoulos, Panayotis and Sophia Lazaretou “International Banking and Sovereign Risk Calculus: the Experience of the Greek Banks in SEE”, including discussion by Panagiotis Chronis, February 2011.
7. Shijaku, Hilda and Kliti Ceca “A Credit Risk Model for Albania” including discussion by Faidon Kalfaoglou, February 2011.
8. Kalluci, Irini “Analysis of the Albanian Banking System in a Risk-Performance Framework”, February 2011.
9. Georgievska, Ljupka, Rilind Kabashi, Nora Manova-Trajkovska, Ana Mitreska, Mihajlo Vaskov “Determinants of Lending Rates and Interest Rate Spreads”, including discussion by Heather D. Gibson, February 2011.
10. Kristo, Elsa “Being Aware of Fraud Risk”, including discussion by Elsida Orhan, February 2011.
11. Malakhova, Tatiana “The Probability of Default: a Sectoral Assessment”, including discussion by Vassiliki Zakka, February 2011.
12. Luçi, Erjon and Ilir Vika “The Equilibrium Real Exchange Rate of Lek Vis-À-Vis Euro: Is It Much Misaligned?”, including discussion by Dimitrios Maroulis, February 2011.
13. Dapontas, Dimitrios “Currency Crises: The Case of Hungary (2008-2009) Using Two Stage Least Squares”, including discussion by Claire Giordano, February 2011.