# Independent and Accountable Central Banks and the European Central Bank

**Pedro A. B. de Sousa**

European Integration online Papers (EIoP) Vol. 5 (2001) N° 9;
http://eiop.or.at/eiop/texte/2001-009a.htm

Date of publication in the EIoP : 27.7.2001

| Full text | Back to homepage | PDF |
| This paper's comments page | Send your comment! to this paper |

**Keywords**

European Central Bank, accountability, democracy, EMU, European Parliament, institutions, legitimacy, transparency; political economy, Treaty on European Union, economics

**Abstract**

This paper begins with the concept of central bank independence and focuses its argument around one of its major drawbacks – the potential absence of accountability by the monetary authority. Then, beyond defining an alternative legal central bank independence index, we analyse the current Statutes of thirty-two central banks, and we quantify their legal independence and accountability degrees. With that data, we confirm previous studies, showing evidence of a *de jure* negative relationship between central bank independence and democratic accountability, though not as strong as it is usually argued. Still, we remain aware that some very independent central banks are also very low accountable – the European Central Bank (ECB) is a good example. Finally, we discuss the advantages and disadvantages of a contract *à la Walsh* between the ECB and a European Community organ, and we ask for a more in-depth analysis and understanding of these subjects, in order to improve the EMU institutional picture.

**Kurzfassung**

Dieses Paper beginnt seine Darstellung mit dem Konzept der Unabhängigkeit von Zentralbanken und konzentriert sich auf einen der wesentlichsten Nachteile, nämlich das mögliche Fehlen von politischer Verantwortlichkeit. Anschließend werden auf Basis eines alternativen Indexes für die rechtliche Unabhängigkeit von Zentralbanken die aktuellen Statuten von 32 Zentralbanken analysiert und deren Grad an rechtlicher Unabhängigkeit und politischer Verantwortlichkeit quantifiziert. Mit diesen Daten werden frühere Studien bestätigt, die eine *de jure* negative Beziehung zwischen Zentralbankunabhängigkeit und demokratischer Verantwortlichkeit zeigen, allerdings nicht ganz so stark wie üblicherweise behauptet. Dennoch bleibt festzuhalten, daß auch einige sehr unabhängige Zentralbanken auch besonders wenig politisch verantwortlich sind – die Europäische Zentralbank (EZB) ist dafür ein gutes Beispiel. Abschließend werden die Vor- und Nachteile eines Vertrages "*à la Walsh*" zwischen der EZB und der EG diskutiert und wir fordern eine tiefere Analyse dieser Themen, um das institutionelle Bild der EWU zu verbessern.

**The author**

***Pedro António Basto de Sousa*** is auxiliary professor, Departamento de Economia, Universidade Portucalense; email: pedros@upt.pt

# Independent and Accountable Central Banks and the European Central Bank (*)

**Pedro A. B. de Sousa**

European Integration online Papers (EIoP) Vol. 5 (2001) N° 9;
http://eiop.or.at/eiop/texte/2001-009a.htm

Date of Publication in EIoP : 27.7.2001

| Abstract | Back to homepage | PDF |
| This paper's comments page | Send your comment! to this paper |

## Contents:



---



## 1 Introduction

In the last few years, a large number of countries have adopted relatively high levels of independence for their central banks (CBs). This institutional separation of responsibilities between governments and CBs is not a new concept, but something that the time and the political and economic conditions have made to emerge again. Newer are the defence at the academic level and the political acceptance, of the idea that freeing the monetary policy responsibility and authority from the politicians' hands, in particular from the executive and legislative branches, it generates favourable conditions for price stability – the primary objective in a large number of developed and developing countries.

The defence of central bank independence (CBI) is based on theoretical and empirical foundations. In fact, a considerable number of empirical studies have revealed that independence would be associated to a favourable evolution of certain economic variables; and it would create the right background to reduce the average inflation, without any loss in the real product, what has allowed some authors to argue that CBI is a "free lunch". The theoretical view favouring CBI is found in the new macroeconomics approach, where, beyond other aspects, it is important to know how to set up

the right institutions to achieve the best economic outcomes.

In spite of the large academic work favouring CBI, some authors argue against it. Recently, one of the critiques consists in the potential absence of democratic accountability of independent institutions – being independent, a central bank can be transformed into a bureaucratic body that pursues its own objectives, neglecting other economic policy objectives, as is the case of a low unemployment goal. The concretisation of these worries in the context of the European Central Bank (ECB) supports the argument that a democratic deficit exists in the European Monetary Union (EMU). Recently, a wide spectrum of suggestions has emerged to improve the EMU institutional structure. Consolidating those suggestions, we find ourselves describing an ECB applied contract *à la Walsh*, whose advantages and disadvantages are discussed in this paper.

This paper is divided into five sections. After this introduction, in the second part we present the theoretical and empirical foundations of CBI. The third part is reserved to discuss and present empirical results substantiating the argument that there is a trade-off between independence and accountability, though not so strong as it is usually argued. In the fourth section, we talk about a contract between the ECB and a Community organ, and we discuss the advantages and disadvantages of that solution. Finally, in the last section of this paper, we conclude.

---



# 2 Independence – Concept and Foundations

## 2.1 The Concept

In recent years, in monetary policy, it decreased the relative concern about the rules versus discretion debate and it increased the discussion on how we shall institutionally establish monetary authorities and what incentives should be offered to them in order to achieve the price stability objective. This shift was accompanied by the revision of the Statutes of a large number of central banks, in order to increase the degree of independence from political interference.

In short, CBI excludes government's interference, but in particular the concept is subject to three interpretations. In the first place, personal independence, related to nomination and dismissal processes of the central bank board members. In the second place, financial or economic independence, which requires, among other things, the exclusion of central bank financing of the excesses of public spending. Finally, political independence, where we analyse the freedom of the monetary authority in setting its objectives (objectives independence) and in choosing the instruments to achieve those objectives (operational / instruments independence) (Debelle and Fischer, 1994).

The effective degree of autonomy(1) of a central bank does not depend only on what is legally established; it also depends on the stronger (or weaker) central bank board members' personality and on the political and social environment. Some authors (e.g., Debelle and Fischer, 1994; Hayo, 1998; and Posen, 1993) argued that the relatively high level of independence enjoyed by some central banks is a direct effect of anti-inflation social preferences. Nevertheless, it will be comprehensible to use the legal texts for evaluating the autonomy degree of a central bank when, for example, this institution does not have enough performance record, as in the case of the European Central Bank (ECB).

## 2.2 Theoretical Foundations

The theoretical case for CBI rests on the assumption that price stability is a fundamental, if not the primary objective of monetary policy – high inflation or deflation environments anticipated or not by the public, cause enormous economic, political and social costs, as some countries' past experiences reveal. That objective is presumably not sufficiently safeguarded by elected politicians who focus their concerns on the short-term, or by politically dependent central banks. Therefore, the monetary policy and the price stability objective are entrusted to autonomous agents that are not subject to elections and that show a longer temporal horizon. In general, the selected agents are given only instruments (operational) independence in order to achieve the objectives established by the principal (society) or by its democratically elected representatives (government or parliament).

---

3

From the theoretical standpoint, CBI emerges as a solution to three different, but related problems. First, CBI can make the relative dominance of the fiscal authority (and policy) on the monetary authority (and policy) more difficult. In the context of Sargent and Wallace (1981), if monetary authorities are the dominant players and move first, then fiscal authorities will accommodate in order to satisfy the long-run government budget constraint, and inflation will correspond to the monetary authorities' wishes.

Secondly, an independent central bank protects society from the distortions caused by electoral business or partisan cycles. This reason currently rests in the assumption that the long run Phillips Curve is vertical at the natural rate of unemployment, thus monetary policy is neutral in the long run. Empirical evidence demonstrates that in post-war period, OECD countries had pre-electoral expansionary policies, and also a post-electoral partisan cycle.

The first models of political business cycles with opportunistic governments were presented by Nordhaus (1975) and Lindbeck (1976). According to this theory, self-interested office-motivated politicians, independently from political parties, use fiscal and monetary policy in order to influence the economy: prior to an election expansionary policies are undertaken, reducing unemployment and increasing the popularity of the incumbents; following the election victory, they implement contractionary policies in order to reduce the inflationary consequences of the pre-election boom. With respect to partisan cycles, the first model is due to Hibbs (1977). According to this model, there is a difference in the policy choices and outcomes (in inflation, amongst other) of partisan governments that act in the interest of the ideological preferences of their political constituencies.

These theories originally rested on an adaptative expectations augmented Phillips Curve with a less favourable trade-off in the long run than in the short run, and on myopic voters and backward-looking agents, who are systematically fooled. However, even with rational expectations, these electoral and partisan cycles remain valid when voters are rational but imperfectly informed about certain characteristics of the government or about its implemented policies. This asymmetry of information allows incumbents to create economic cycles *à la* Nordhaus or *à la* Hibbs.

In the context of this second reason, CBI isolates monetary policy from these opportunistic and partisan influences.

---

4

Finally and in third place, CBI is a solution to the dynamic inconsistency of monetary policy. This subject is related to the idea that more independent central banks convey larger credibility to an anti-inflationist policy. The basic idea of the dynamic inconsistency theory consists in the existence of an

inflation bias that emerges because one assumes that policymakers are systematically tempted to stimulate the economy, in order to respond to some motivations (Cukierman, 1992), exploiting the short-run Phillips Curve: although at the current moment they promise average low inflation rates, later on, when the private sector has already incorporated that information in its expectations and decisions, policymakers are tempted to abandon the assumed commitments. The result is an economy with higher inflation without any real output gains, because it is assumed that the private sector knows the model and it anticipates the opportunist behaviour of policymakers, not believing in the good initial announcements. This is a problem of credibility. According to this theory, initiated by Kydland and Prescott (1977) and developed fundamentally by Barro and Gordon (1983), a policy is credible if it does not suffer from dynamic inconsistency, what would happen if the policymakers' behaviour were limited by rules or by other "commitment technology" that influences policymakers' incentives directly(2).

A solution to the inflationary bias problem focuses on the central bank's preferences(3). That solution, incorporating the delegation of monetary policy authority and responsibility to an autonomous agent that acts in agreement with an objective function, which is different from society's (and from elected politicians'), can assume two approaches: a legislative one, where a conservative agent is made independent from the government(4); and a contractual approach, where the central bank is given operational independence (remaining dependent on government with respect to objectives).

The first of these delegation solutions – the conservatism solution, presented formally by Rogoff (1985) – identifies the independence concept with the selection of an agent for central banker with a higher relative aversion to inflation than the society's. As a result, the inflation bias is eliminated, although with an inevitable cost – the central bank inability to react to productivity shocks. Therefore, the conservative solution implies a trade-off between flexibility and credibility. Lohmann (1992) proposed a solution to reduce this trade-off, when she admitted that the government was able to override central bank's decisions, although with some political cost, which in her contribution behaves as a proxy for the level of independence enjoyed by the central bank.

The Rogoff's solution embodies another difficulty comprised in the inability to find a central banker with the right conservative preferences. The contractual approach (or the inflation targets approach), developed by Walsh (1995), Persson and Tabellini (1993) and Svensson (1997, 1998), overcomes that difficulty because it rests on the assumption that, rather than relying on the possibility of finding the conservative central banker, it could be possible to affect directly the incentives faced by the central bank. Walsh (*op.cit.*), in the principal-agent context, suggests an optimal incentive contract for central bankers, in which rewards and penalties (monetary or of some other kind, e.g., threats of firing) are imposed on an instruments independent central bank, in order to induce the socially optimal policy, eliminating the inflationary bias and allowing an optimal response to shocks, even with central bank information advantage. Svensson (*op.cit.*) shows that, with persistence in unemployment or in output, a linear inflation contract continues to yield an equilibrium that mimics the solution under commitment, provided that it includes a state-contingent component.

---

5

Nowadays, the example more similar to the Walsh optimal linear contract is the Policy Targets Agreement, achieved between the Treasure and the Governor of the Reserve Bank of New Zealand (5).

## 2.3 Empirical Foundations

The view favouring CBI, besides being justified in theoretical models, also bases its foundations on

empirical studies that show favourable correlations between CBI and some economic variables: inflation, output growth, disinflation costs (sacrifice ratio), inflation benefits, productivity growth, private investment, unemployment, real interest rates, output and inflation trade-off, fiscal deficit and high-powered money growth(6).

Above all, the most frequent result respects to the negative correlation between CBI and average inflation, which is found at least in developed countries, although without any unequivocal and significant relationship between central bank autonomy and real output. Thus, we could say that CBI is a free lunch supplying a credibility bonus. However, in spite of the negative correlation between CBI and inflation, it is premature to support such a causality direction between the two variables. It is possible that the negative relationship could be due to a third variable: due to a bad inflation experience in past, society can, on one hand, support economic policies with price stability as a goal and, on the other hand, demand more independent central banks. After all, both CBI and low inflation can be two reflexes of society's inflation adverse preferences.

# 3 Central Bank Independence and Accountability

## 3.1 Critics Against Central Bank Independence

In spite of being backed up by empirical and theoretical arguments, CBI is subject to some critics. In first place, some of the dynamic inconsistency model assumptions are criticisable, e.g., the hypothesis that policymakers systematically continue exploring the private sector expectations (McCallum, 1995)(7). Besides that, the academic literature also presents doubts about the suggested solutions for the dynamic inconsistency problem. In this respect, for example, McCallum (*op. cit.*) shows its doubts on the effectiveness of the Walsh (1995) contract: being accepted that one of the reasons for the dynamic inconsistency problem is the policymakers' inability to maintain their commitment, one must accept that it will be very difficult to sustain the contract between politicians policymakers and the central bank.

In second place, some problems are related to empirical evidence conclusions, particularly, the difficulty in measuring the effective degree of independence; the negligence of significant variables in the explanation of the inflation; the little robustness in statistical correlations and the absence of causality relationships, in spite of being argued by some authors(8).

---

6

A third order of criticism is based on the separation between fiscal and monetary authorities that is associated with CBI. On one hand, it could imply difficulties in the coordination/cooperation between the two authorities, with potential losses in the achievement of their objectives. On the other hand, it arises the worry that an independent central bank will be free to do what it wants to do, whatever its effects on the society's welfare – this is the central bank accountability (CBA) theme(9). This assumes importance in times of large economic shocks and especially when the government's (and society's) objectives do not correspond to the independent central bank's(10).

It is true that in the absence of monetary policy effects on employment and output, it will be more difficult to talk about the necessary accountability of central banks. In this respect, e.g., Cukierman says that "existing evidence shows that, although such [real] effects are temporary, they are nevertheless present and sometimes non negligible. Hence, monetary policy can also be gainfully used to stabilise real shocks to employment and output."(11). Therefore, it seems useful to continue talking about independence and accountability.

## 3.2 Central Bank: Independent or Accountable?

In the dictionary, 'accountability' is the quality or the state of being 'accountable'. Someone is accountable when is responsible for his own decisions or actions and is expected to explain them when asked.

The accountability and independence concepts are closely related with the democracy concept. In a representative democracy, the parliament (and the government) are chosen by the public, who holds them accountable, at least through the election process.

Accepting that central banks are those entities that may conduct monetary policy, and recognizing the politicians' natural tendency to use in excess the monetary instruments to achieve their own objectives, society delegates the monetary policy responsibility to an independent central bank. The democratic legitimacy of this central bank requires that it should be accountable to society, or at least to society's elected representatives, by the effects that its behaviour has on the society's welfare and on the achievement of the objectives fixed in the Statutes of the central bank(12).

---



This legitimacy mechanism is a very difficult task, mainly in those cases in which the central bank's Statutes widely protect it from any government interference and when the monetary authority enjoys both objectives and instruments independence. In the context of this discussion, Amtenbrink (1999) reminds us that some authors accept this lower accountability implied by a higher CBI – they argue that if the safeguarding of a democratic system requires monetary and price stability and if this background is favoured by CBI, then we should accept the lower CBA degree as a price to pay for a stable democratic regime.

The legal conflict between CBI and CBA was empirically demonstrated in three previous studies(13) and it is partially confirmed in this article with a larger sample of central banks.

## 3.3 Empirical Evidence

### 3.3.1 Previous work

Until now there is a small number of empirical studies on CBA. One problem that emerges in this context is to find an accurate CBA index, as it happens with CBI. The first contribution to the construction of an accountability index belongs to Havrilesky (1995). But because the Havrilesky index widely overlapped with CBI indexes, Briault, *et al.* (1996) suggested another index based on four criteria: "whether the central bank is subject to external monitoring by parliament; whether the minutes of meetings to decide monetary policy are published; whether the central bank publishes an inflation or monetary report of some kind, in addition to standard central bank bulletins; and whether there is a clause that allows the central bank to be overridden in the event of certain shocks". Using this index to evaluate 14 central banks(14), Briault, *et al.* (*op. cit.*) found an inverse relationship, statistically significant, between CBA and central bank *goal* independence. Also in their article, countries recognized by good reputation in the fight against inflation seemed to be characterized by low accountability levels, happening the opposite in the cases of less respectable reputation countries. This evidence would be in agreement with the idea that accountability (mainly transparency) would also have served as a partial substitute for central bank reputation (and independence), when monetary regimes had not been completely established. Nolan and Schaling (1996), using the Briault, *et al.*'s accountability index, found as well a negative correlation between CBI and CBA.

Although not decreasing the merit of the previous contributors(15), De Haan, *et al.* (1998) provides a more detailed quantification of the CBA concept(16) and the analysis of the laws in vigour in 1997 with respect to a sample of 16 central banks(17). Making simple regressions of CBI data on accountability aspects, they concluded that there seemed to exist a positive relationship between CBI and the 'objectives' accountability aspect (although this relationship is very weak), and negative relationships between the CBI and the other two accountability aspects – 'transparency' and 'final responsibility for monetary policy' (the latter being the more significant). Finally, they also present evidence for a negative (and weak) correlation between CBI and CBA.

---



### 3.1.2 Additional empirical contribution

The literature has been using the CBI and CBA evaluations based on the legal Statutes and Law Acts that have recently been subject to changes, particularly those concerning some European central banks. In this paper we make a new central bank evaluation taking into consideration the current and updated Statutes of thirty-two central banks (ECB included). And, besides using the De Haan, *et al.* (1998)'s CBA index, we build an alternative and very simple legal independence index, following the autonomy aspects underlined by the European Monetary Institute (IME), in its Report of Convergence (November of 1996), not neglecting, however, the vast previous and valuable contributions(18).

In the alternative CBI index, we divide the independence into three classes, in compliance with the description presented in the section 2.1. of this paper. In the quantification of each of these classes we consider some criteria, to which we can get different answers, and which are subject to different quantifications. Finally, for each central bank, we sum all the partial quantifications to obtain the legal independence degree (19).

As in De Haan, *et al.* (1998), we regress independence on accountability and on the various aspects of accountability (although it is not our objective to consider the second variable as explanatory of the first). We obtain the following results:

Table 1

In the next figures, we plot CBI against CBA and "final responsibility" CBA aspect.

Figure 1 | Figure 2

With a higher sample than De Haan, *et al.* (1998)'s, we find similar evidence: negative relationships between CBI and two CBA aspects; but the only that is statistically significant is the one that refers to "Final Responsibility for Monetary Policy" CBA aspect(20). CBI and CBA are negatively correlated, but this relationship is very weak with our sample. It seems that, although it exists, the presumable *de jure* trade-off between CBI and CBA is not as strong as some authors argue. It could be that the *ancient* severe trade-off between CBI and CBA has not survived to the last modifications of some central banks' Statutes, whose updated versions were analysed in this paper.

# 4 Accountability Through Contracts: The ECB Case

In spite of not having found a significant negative relationship between CBI and CBA in our augmented sample, we cannot forget that some central banks enjoy both relatively low *de jure* accountability and high legal independence degrees – the ECB is a very good example of that case.

9

## 4.1 A Low Legally Accountable European Central Bank

The institutional structure of the EMU has been criticised for showing an alleged democratic deficit, which is partially justified by the low degree of legal accountability of the ECB when compared with its high level of independence(21). Applying the De Haan, *et al*. (1998)'s CBA index, we observe that the ECB is less accountable in what concerns to the 'final responsibility for monetary policy' aspect, and more accountable in the case of the 'ultimate objectives', where we only observe the absence of a legally established quantified objective for monetary policy(22).

In a democracy, the public elects a parliament and a government. Accepting that monetary policy is best managed by an independent agency, the parliament (and the government) appoints a group of experts to decide and implement monetary policy, granting operational independence to achieve some established objectives. As the monetary policy effects on society are not negligible, a central bank should answer before *someone*, by the achievement of some *well-specified tasks*. Besides that, the organ before which the monetary authority must be accountable needs to have *instruments to sanction* a poor performance.

In the case of the ECB, this institution must be accountable to the European citizens. In spite of not being possible to be directly accountable, it should answer before the society's elected representatives. In the EMU, the more suitable Community organ is the European Parliament (EP), although the last European elections have witnessed a low interest by the voters. Besides the EP, the European Community (EC) Treaty establishes also that the European Court of Justice (ECJ) can exert control and jurisdiction on the ECB(23).

In practice, this monitoring role is not so easy to conduct. In first place, the EC Treaty and the Statutes of the ESCB and ECB do not provide for sufficient instruments to hold the ECB accountable – it lacks, especially, a clear yardstick for evaluate its performance in the achievement of the objectives. Indeed, without a clear Treaty-based definition of price stability it is hard for outsiders to demonstrate that the ECB is at fault. Therefore, it remains also complex to think on penalisation for poor performance(24).

10

In second place, the EP cannot make amendments in the institutional structure governing the ECB. This is a unique position that the ECB enjoys even among the most independent central banks, as any change in the Statutes of the ECB and ESCB requires a change in the EC Treaty, which for itself requires that all Member States agree with that legal modification. Furthermore, the ECB has the right to be consulted in the case of modification of its Statutes(25).

In spite of the bad legal picture painted in the last paragraphs, until now the ECB has made some effort to present more information than is legally required, increasing the transparency of monetary policy, with the exception of the minutes of the Governing Council meetings, fact that has originated some discussions(26). Moreover, the ECB has strengthened its relationship with the EP, by attending hearings organised by the Committee on Economic and Monetary Affairs of the EP. Also, we could always remember that in the beginning it was the national parliaments who dictated the rules of the game, through ratification. Therefore, the ECB did not impose its high independence and low accountability on the European society; instead, it was accepted and decided by the national parliaments.

## 4.2 A Contractual Approach to the European Central Bank?

The creation of the ECB recalled the discussion on CBI and CBA. In particular, it has been emerging critics against the high independence and the low democratic accountability of the newer European monetary authority. At the same time, the literature has been advancing some partial solutions to improve the picture(27).

Borrowing from the literature of contracts with central bankers, we could combine those partial solutions into a contractual one, in order to, as much as possible, increase the accountability without reducing the independence. This solution would imply a change in the institutional structure of EMU and would consist, basically, of an incentive contract *à la Walsh* (similar to the Reserve Bank of New Zealand contract) between the ECB and a Community organ that could incorporate the Ecofin Council and a proportionally representative group of EP parliamentarians. By this contract, the ECB would be granted with instruments (operational) independence to pursue an objective (conditioned or not in the achievement of other objective; e.g., a target range for inflation, but conditioned to certain maximum level of unemployment or minimum output increase in the Euro zone). These binding quantified objectives would be the outcome of a bargaining process found at the heart of the Community organ, where both the Ecofin and the EP would have equal weights in voting the objectives, and where the ECB would also participate.

---



Under this framework, the ECB would have to answer before the Community organ by the achievement of those objectives. In the case of poor performance, i.e., not achieving the goals under certain conditions(28), the sanction would consist in the dismissal of all the Executive Board of the ECB and in fines for all national central banks that have seat at the Governing Council(29).

With this institutional solution, the EP would increase its power and participation in monetary policy decisions, that affect all the European citizens whose preferences are represented by the European parliamentarians. Therefore, we would achieve a more democratic legitimacy in the EMU forum and a more accountable ECB.

This solution, however, has some drawbacks. First, like other types of contracts, it is necessary to preview every state of nature (e.g., the extreme circumstances invoked for applying and for not applying the sanctions).

Second, in the setting of the objectives, what bargaining mechanism should exist? And how should votes be shared between countries?(30) Moreover, the contract parameters are not constant over time, requiring a revision on a period-by-period basis, which would be very difficult, as it would involve a renegotiation between a group of several countries and corresponding different preferences over macroeconomic aggregates, as they differ with respect to the shocks hitting their economies and in the ways they are transmitted. Because of this, the bargaining process could be subject to politicisation. Dixit (1998) distinguishes between *ex ante* and *ex post* types of politicisation. While the former is a problem of coordination and refers to the difficulty of achieving cooperation between the member countries, the latter is a problem of lack of commitment and relates to the behaviour of each country after being hit by a shock. Assuming that the commitment of each country is assured, Dixit (*op. cit.*) concludes that a lack of coordination between the member countries is not itself a cause of too much inflation if each government, before shocks occur, commits to a contingent schedule that describes how he will influence the central bank's decisions, in case of being hit by shocks. Dixit and Jensen (2000) show the same conclusion and argue that even the institutional setting aiming to partially mitigate such politicisation can be counterproductive.

If the problem is the possibility of *ex post* politicisation, i.e., assuming that after shocks occur, each country remains free to renegotiate the contract established between the ECB and the member countries, Dixit (2000) characterizes the feasible optimal flexible monetary rule, consistent with the commitment regime (no renegotiation of the contract) by all countries. According to that rule, the inflation allowed by the ECB (established under the influence of the countries' incentives) is a function of the realised shocks(31).

---

12

The third drawback of the institutional suggestion is whether it is fair to punish all the members of the Governing Council equally. After all, they do not share a uniform practical incumbency. In this case, we can ask whether it is preferable to have a collective accountability or an individual one(32).

Finally and as concerns sanctions on ECB, are the dismissal rule and the monetary fines hard enough? Perhaps yes, especially if the dismissal is associated to a loss of public image and credibility, which is very valuable for future official functions(33).

An in-depth analysis of the advantages and disadvantages of such an institutional structure will be valuable for improving the current design of the ESCB, ECB, and EMU.

# 5 Conclusion

Recent years have witnessed a modification in the institutional relationship between central banks and government (and parliament), especially because of the increase of central bank independence. Behind this institutional change we find social and political acceptance, beyond a wide academic support. However, some authors argue against it, underlining theoretical and empirical doubts, but also pointing out that central bank autonomy collides with its accountability – since its activity affects society's welfare, that institution should answer by its behaviour. If the agent (central bank) is granted an overall independence (both of objectives and instruments), it is probable that the agent will neglect the principal's (society's) preferences, only acting in order to achieve price stability. Recently, academic literature has shown empirical evidence for a negative correlation between legal independence and legal democratic accountability.

In this paper, beyond having defined an alternative and simple central bank legal independence index, we expand the sample used by previous studies, to include thirty-two central banks, whose current and, in some cases updated statutes are analysed, in order to quantify their legal independence and accountability degrees. With that data, we confirmed the conclusions of previous studies, showing that in central banking, greater legal independence is related to a small degree of legal accountability, especially its 'final responsibility for monetary policy' aspect. However, we state that the trade-off between independence and accountability is not so strong as some authors have been arguing.

In the last part of this paper, we concentrated our attention on the case of the ECB, whose relatively low accountability and high independence constitutes an exception to the empirically evidenced absence of a significant relationship shown with our sample. Arranging methodically some suggestions that were presented by the literature to improve the picture, we assess the advantages and disadvantages of an incentive contract *à la Walsh* between the ECB and a Community organ (constituted by the Ecofin Council and by a proportional representative group of EP parliamentarians), which would imply an institutional change in the EMU.

An in-depth analysis of those advantages and disadvantages, as well as a general discussion centred on the contractual approach, will be valuable for improving the current design of the ESCB, ECB

and EMU. After all, we appreciate an independent and accountable ECB.

---

# Appendix 1[↑]: Legal Independence and Accountability Indexes – Methodology

## Appendix 1.A – Alternative Legal independence Index – Criteria and Methodology

In this paper we evaluate thirty-two central banks, in agreement with the following criteria that we suggest. For each central bank, we obtain the CBI degree by summing the points related to all aspects.

Table 2

In spite of arguing that legal independence shall be defined by the evaluation of the nine aspects, in our evaluation we exclude two of them. We exclude the fourth aspect to avoid that CBI and CBA measures could overlap with respect to "ultimate responsibility for monetary policy", which would artificially increase the CBI/CBA negative relationship; we also leave out the ninth aspect, because we do not have enough information concerning this issue for all the analysed central banks.

## Appendix 1.B – Democratic Accountability Index – Criteria and Methodology

We also evaluate the thirty-two central banks applying the De Haan, *et al.* (1998)'s CBA index. For each of the following criteria there are two possible answers: yes or no, to which corresponds, respectively, one or zero points, that are then summed to obtain the CBA degree.

**A. Ultimate objectives of monetary policy:**

1. Does the central bank law stipulate the objectives of monetary policy?
2. Is there a clear prioritisation of objectives?
3. Are the objectives clearly defined?
4. Are the objectives quantified (in the law or based on document based on the law)?

**B. Transparency:**

5. Must the central bank publish an inflation or monetary policy report of some kind, in addition to standard central bank bulletins/report?
6. Are minutes of meetings of the governing board of the central bank made public within a reasonable time?
7. Must the central bank explain publicly to which extent it has been able to reach its objectives?

**C. Final responsibility for monetary policy:**

8. Is the central bank subject to monitoring by Parliament?
9. Has the government (or Parliament) the right to give instructions?
10. Is there some kind of review in the procedure to apply the override mechanism?
11. Has the central bank possibility for an appeal in case of an instruction?
12. Can the central bank law be changed by a simple majority in Parliament?
13. Is past performance a ground for dismissal of a central bank governor?

# Appendix 2

Table 3 | Table 4

---

# References

Albanesi, S., Chari, V.V. and Christiano, L.J. (2001), How severe is the time inconsistency problem in monetary policy?, *NBER Working Papers*, No. 8139, February.

Amtenbrink, F. (1999), *The Democratic Accountability of Central Banks – A Comparative Study of the European Central Bank*, Oxford: Hart Publishing.

Barro, R. and Gordon, D. (1983), Rules, discretion and reputation in a model of monetary policy, *Journal of Monetary Economics,* 12, pp. 101-121.

Berger, H., De Haan, J. and Eijffinger, S. (2000), Central bank independence: An update of theory and evidence, *CEPR Discussion Paper*, No. 2353, January.

Bini Smaghi, L. (1998), The democratic accountability of the European Central Bank, *Mimeo, European Monetary Institute*, May.

Blinder, A.S. (1999), *Central Banking in Theory and Practice, Second Edition,* Massachusetts: MIT Press.

Briault, C., Haldane, A. and King, M. (1996), Independence and accountability, *Bank of England Working Paper*, No. 49, April.

Brueckner, M. (1997), Voting and decisions in the ECB, *Florence, EMU working paper*.

Buiter, Willem (1999), Alice in Euroland, *CEPR Policy Paper*, Nº. 1.

Cassela, A. (2000), Games for Central Bankers: Markets vs. politics in public policy decisions, *CEPR Discussion Paper*, No. 2496, July.

Cukierman, A. (1992), *Central Bank Strategy, Credibility, and Independence – Theory and Evidence*, Cambridge, Massachusetts: The MIT Press.

Cukierman, A. (2000), Accountability, credibility, transparency and stabilization policy in the Eurosystem, *Foerder Institute for Economic Research (Tel-Aviv University) Working Paper*, No.4-2000, January.

Debelle, G. and Fischer, S. (1994), How independent should a central bank be?, *Federal Reserve Bank of Boston – Conference Series*, No. 38, June.

De Grauwe, P.; Dewachter, H. And Aksoy, Y. (1999), Effectiveness of monetary policy in Euroland, *Empirica*, 26, pp. 299-318.

De Haan, J., Amtenbrink, F. and Eijffinger, S. (1998), Accountability of central banks: Aspects and quantification, *CentER for Economic Research (Tilburg University)*, No. 9854, May.

De Haan, J., Amtenbrink, F. and Eijffinger, S. (2000), The democratic accountability of the ECB, *Journal of Common Studies*, 38 (3), September, pp. 393-407.

Dixit, A. (1998), Equilibrium contracts for the European Central Bank, *Princeton University working paper*, November.

Dixit, A. (2000), A repeated game model of monetary policy, *Economic Journal*, 110 (446), pp. 759-780, October.

Dixit, A. and Jensen, H. (2000), Equilibrium contracts for the central bank of a monetary union, *Munich CESifo Working Paper*, No. 400, December.

Eijffinger, S. and De Haan, J. (1996), The political economy of central-bank independence, *Princeton Special Papers in International Economics*, No. 19, May.

Eijffinger, S., Hoeberichts, M. and Schaling, E. (2000), A theory of central bank accountability, *CEPR Discussion Paper*, No. 2354, January.

Goodhart, C.A.E. and Huang, H. (1995), What is the central bank's game?, *Mimeo, London School of Economics*, November.

Havrilesky, T. (1995), Central bank autonomy, central bank accountability and inflation performance, *Mimeo, Duke University*, February.

Hayo, B. (1998), Inflation culture, central bank independence and price stability, *European Journal of Political Economy*, 14, pp. 241-263.

Hibbs, D.A. (1977), Political parties and macroeconomic Policy, *American Political Science Review*, 23, pp. 1467-1488.

Issing, Otmar (1999), Willem in Euroland, *CEPR Policy Paper*, Nº 2.

Kydland, F.E. and Prescott, E.C. (1977), Rules rather than discretion: The inconsistency of optimal plans, *Journal of Political Economy*, 85 (3), June, pp. 473-492.

Lindbeck, A. (1976), Stabilization policies in open economies with endogenous politicians, *American Economic Review Papers and Proceedings*, 66, pp. 1-19.

Lohmann, S. (1992), Optimal commitment in monetary policy: Credibility versus flexibility, *American Economic Review*, 82, pp. 273-286.

Lybek, T. (1999), Central bank autonomy, and inflation and output performance in the Baltic States, Russia, and other countries of the former Soviet Union, 1995-97, *IMF Working Paper* WP/99/04, January.

Masson, P.R., Savastano, M.A. and Sharma, S. (1997), The scope for international targeting in developing countries, *IMF Working Paper* WP/97/130, October.

McCallum, B.T. (1995), Two fallacies concerning central-bank independence, *American Economic Review*, 85 (2), May, pp. 207-211.

Neumann, M. (1995), Society, government, and central bank independence, *University of Bonn – Discussion paper B 338*, December.

Nolan, C. and Schaling, E. (1996), Monetary policy uncertainty and central bank accountability, *Bank of England Working Paper*, No. 54, October.

Nordhaus, W. (1975), The political business cycle, *Review of Economic Studies*, 42, April, pp. 169-190.

Persson, T. and Tabellini, G. (1993), Designing institutions for monetary stability, *Carnegie-Rochester Conference Series on Public Policy*, 39, pp. 53-84.

Posen, A. (1993), Why central bank independence does not cause low inflation: There is no institutional fix for politics, in: *O'Brien, Richard (ed.), Finance and the International Economy: 7: The Amex Bank Review Prize Essays*, Ch. 3, Oxford: Oxford University Press, pp. 41-65.

Randzio-Plath, C. (2000), A new political culture in the EU – Democratic accountability of the ECB, in: *Randzio-Plath, Christa and Padoa-Schioppa, Tommaso (2000), "The ECB: Independence and Accountability"*, ZEI Policy Paper B16.

Rogoff, K. (1985), The optimal degree of commitment to an intermediate monetary target, *Quarterly Journal of Economics*, 100, pp. 1169-1190.

Sargent, N. J. and Wallace, N. (1981), Some unpleasant monetarist arithmetic, *Federal Reserve Bank of Minneapolis Quarterly Review*, 5, pp. 1-17.

Sibert, A. (1999), Monetary policy committees: Individual and collective reputations, *CEPR Discussion Paper*, No. 2328, December.

Svensson, L. (1997), Optimal inflation targets, 'conservative' central banks, and linear inflation, *American Economic Review*, 87, March, pp. 98-114.

Svensson, L. (1998), Inflation targeting as a monetary policy rule, *Mimeo*, *Institute for International Economic Studies, Stockholm University*, August.

Sterne, G. (2000), The devil in the detail of monetary policy frameworks – Issues and measures of monetary framework characteristics, in: *Mahadeva, Lavan and Gabriel Sterne (eds.), Monetary Policy Frameworks in a Global Context,* New York: Routlegde.

Walsh, C. (1995), Optimal contracts for central bankers, *American Economic Review*, 85 (1), March, pp. 150-167.

---

## Endnotes

(*) My gratitude to two referees for making suggestions that improved the paper. I also must gratefully acknowledge all the comments made by Prof. Victor Constâncio (ISEG – UTL Lisbon / Portugal Central Bank Governor) to my Master dissertation, in which this paper is based. All remaining mistakes are of the sole responsibility of the author.

(1) We use the words 'independence' and 'autonomy' interchangeably.

(2) Recently, Albanesi, *et al.* (2001), analysing two monetary models, find that there is not always an inflation bias. However, they do not conclude that lack of commitment in monetary policy cannot account for the bad inflation outcomes of some countries in the past.

(3) The first solution would be the elimination of the distortion factors that originally create *bad* policymakers incentives.

(4) The chosen conservative agent enjoys instruments and objectives independence.

(5) The current Policy Targets Agreement, signed in December 1999, sets the specific targets for achieving and maintaining price stability.

(6) For a survey about empirical evidence results, see, e.g., Eijffinger and De Haan (1996) and Berger, *et al*. (2000).

(7) See also, e.g., Blinder (1999), Neumann (1995), and Goodhart and Huang (1995).

(8) Despite the critics against empirical studies supporting CBI, Berger, *et al.* (2000), remain arguing that countries with more independent central banks have known smaller inflation rates.

(9) "There is a risk that, in order to demonstrate independence, a central bank seeks to enhance its own reputation by breaking records for price stability, hence steering towards deflation." (Randzio-Plath, 2000, p. 4)

(10) Still, one should note that being the central bank Statutes a decision result of the society elected bodies, there exists always an ultimate mean of accountability.

(11) Cukierman (2000, pp. 2 and 3).

(12) "Because monetary policy actions have profound effects on the lives of ordinary people, a central bank in a democracy owes these folks an explanation of what it is doing, why, and what it expects to accomplish. As I often said while I was on the Fed, it's their economy, not ours." (Blinder, 1999, p. 54).

(13) Briault, *et al.* (1996); Nolan and Schaling (1996) and De Haan, *et al.* (1998).

(14) Central Banks of: United Kingdom, New Zealand, USA, Canada, Spain, Sweden, Australia, France, Italy, Japan, Belgium, Netherlands, Switzerland and Germany.

(15) Bini Smaghi (1998) suggested a CBA indicator based on a set of 15 criteria. With it he compared four central banks: USA Fed, Bank of Japan, Bank of England and ECB. See also Sterne (2000)'s CBA index suggestion on a report chapter prepared for the 1999 Central Bank Governors' Symposium held at the Bank of England. Note also that some other authors considered CBA included in CBI indexes (see, e.g., Lybek, 1999; and Masson, *et. al.*, 1997).

(16) See the description of this CBA index in Appendix 1.B of this paper.

(17) European Central Bank and central banks of: Australia, Belgium, Canada, Denmark, France, Germany, Italy, Japan, Netherlands, New Zealand, Spain, Sweden, Switzerland, United Kingdom and USA.

(18) Although we can argue that legal independence is different from effective independence, in this work we only have considered legal independence because one of the evaluated central banks is the ECB, whose performance record is not sufficient to apply CBI non-legal indexes, which are based on several *de facto* aspects, e.g., questionnaires results; the effective central bankers' rotation; verified duration of the mandate of the central banker; and central bank political vulnerabilities. For details about these non-legal CBI indexes, see Cukierman, *et al.* (1992) and Cukierman (1992, pp. 387-389).

(19) See appendix 1.A, about the methodology used in the construction of the alternative legal independence index. Also, see appendix 2 (Tables 3 and 4), where we show the thirty-two central banks evaluation result.

(20) Our results are *only partially* in agreement with De Haan, *et al.* (2000), when they argue that the trade-off between CBI and CBA is only correct as far as decisions about the ultimate goal(s) of and final responsibility for monetary policy are concerned.

(21) Although being justified by the low democratic accountability of the ECB (and of the European System of Central Banks, ESCB), the assumed democratic deficit is a concept more comprehensive, invoked especially in the argument that the European Union suffers from a lack of democracy, because the Community institutional structure is dominated by the Council and by an institution that lacks democratic legitimacy – the Commission – even though its members are appointed by the Member States and collectively accountable to the European Parliament. In the case of the ECB, the widely perceived disequilibria between high independence and low accountability could undermine the credibility of the European economic institutions when adverse economic circumstances arise.

(22) Cf. Appendix 2, Table 4, in this paper.

(23) The ECJ shall review the legality of the ECB's acts (cf. Art. 230, 232, 233 and 234, EC Treaty).

(24) The Reserve Bank of New Zealand is a good example of a clear prescription of objectives.

(25) Cf. Art. 48 (ex Art. N) Treaty on European Union – TEU.

(26) Remember, e.g., the discussion between Buiter (1999) and Issing (1999) on ECB's transparency.

(27) After all, "Accountability can thus be seen as a complement, if not a necessary requirement, for independence." (Bini Smaghi, 1998, p. 4).

(28) Note that it should be clearly established under what circumstances the dismissal mechanism would be applied, as well the exceptional circumstances invoked for not applying the sanction measure.

(29) The monetary fines should be sufficiently high for being credible.

(30) See, e.g., Cassela (2000); Brueckner (1997) and De Grauwe, Dewachter and Aksoy (1999).

(31) And trying "to adhere to a totally rigid full commitment rule would risk a collapse of the whole system into a discretionary regime with even higher inflation" (Dixit, 2000, p. 763).

(32) See, e.g., Sibert (1999).

(33) "The central bank governor may be rewarded with kudos and reappointment for success and punished with scorn and dismissal for failure" (Blinder, 1999, p. 74).

---

# Table 1

## Simple regressions between CBI and CBA aspects

| Accountability Aspects | Constant | Accountability | R2 (adj.) |
|---|---|---|---|
| **Objectives** | 3.638 [9.943] | 0.306 [1.670] | 0.05 |
| **Transparency** | 4.569 [12.934] | -0.309 [-1.303] | 0.02 |
| **Final responsibility** | 5.501 [15.199] | -0.525 [-4.0279] | 0.33 |
| **Accountability** | 5.064 [9.280] | -0.160 [-1.726] | 0.06 |

# Table 2

| CRITERIA | Points |
|---|---|
| **Personal Independence** | |
| 1. Appointment of the central bank board members | |
| a) All the appointments to the central bank board are made independently of the government. | 1.00 |
| b) More than half of the appointments to the central board are made independently of the government. | 0.66 |
| c) Less than half of the appointments to the central board are made independently of the government. | 0.33 |
| d) Government has influence in all the appointments to the central bank board. | 0.00 |
| 2. Mandate duration of more than half of the central bank board members. | |
| a) Equal or more than eight years | 1.00 |
| b) Between six and eight years. | 0.75 |
| c) Five years. | 0.50 |
| d) Four years. | 0.25 |
| e) Less than four years. | 0.00 |
| 3. Government (or other fiscal branches representatives) participation at central bank meetings, where monetary decisions are taken. | |
| a) No government representation at central bank meetings. | 1.00 |
| b) Government is represented at central bank meetings, but without right to vote. | 0.50 |
| c) Government is represented at central bank meetings, with right to vote. | 0.00 |
| **Political Independence** | |
| 4. Ultimate responsibility and authority on monetary policy decisions. | |
| a) Central bank has the ultimate (final) responsibility on monetary policy decisions. | 1.00 |
| b) Central bank has not the ultimate responsibility on monetary policy decisions. | 0.00 |
| 5. Price stability | |
| a) It is the sole objective. | 1.00 |
| b) It is one of two objectives, but it is given preference to price stability. | 0.66 |
| c) It is one among various others objectives. | 0.33 |
| d) Law does not establish anything about policy objectives. | 0.00 |
| 6. Banking supervision | |
| a) Not considered in the objectives or functions of the central bank. | 1.00 |

c) It dominates other central bank functions or objectives. 0.00

7. Monetary policy instruments

a) Central bank enjoys autonomy is monetary policy instruments selection. 1.00

b) Central bank is not autonomous in the selection of monetary policy instruments. 0.00

**Economic and Financial Independence**

8. Government financing

a) Central Bank cannot directly finance the government. 1.00

b) Law allows that central bank provide credit facilities to government and other financing help. 0.00

9. Ownership of the central bank's (equity) capital

a) Government does not own any central bank's capital. 1.00

b) Government owns less than half of the central banks capital. 0.66

c) Government owns more than half of the central bank's capital. 0.33

d) Government owns all the central bank's capital. 0.00

# Table 3

## Evaluation matrix of central bank independence and accountability

| Country | | Independence | | | | Accountability | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Personal | Political | Economic and Financial | Total | Ultimate objectives | Trans-parency | Final respon-sibility | Total |
| 1 | Argentina | 1.25 | 1.83 | 1.00 | 4.08 | 1 | 1 | 2 | 4 |
| 2 | Australia | 0.50 | 2.16 | 0.00 | 2.66 | 1 | 1 | 5 | 7 |
| 3 | Austria | 1.66 | 2.16 | 1.00 | 4.82 | 2 | 2 | 1 | 5 |
| 4 | Belgium | 1.75 | 1.50 | 0.00 | 3.25 | 0 | 0 | 4 | 4 |
| 5 | Canada | 0.50 | 1.83 | 0.00 | 2.33 | 1 | 2 | 4 | 7 |
| 6 | Chile | 2.00 | 1.83 | 1.00 | 4.83 | 1 | 1 | 3 | 5 |
| 7 | Czech republic | 2.75 | 2.16 | 1.00 | 5.91 | 3 | 1 | 2 | 6 |
| 8 | Denmark | 2.16 | 1.83 | 0.00 | 3.99 | 1 | 1 | 2 | 4 |
| 9 | EMU - ECB | 2.50 | 2.66 | 1.00 | 6.16 | 3 | 1 | 1 | 5 |
| 10 | England | 1.00 | 2.66 | 0.00 | 3.66 | 4 | 3 | 4 | 11 |
| 11 | Finland | 2.50 | 2.66 | 1.00 | 6.16 | 2 | 1 | 2 | 5 |
| 12 | France | 1.50 | 2.16 | 1.00 | 4.66 | 3 | 1 | 2 | 6 |
| 13 | Germany | 1.25 | 1.83 | 1.00 | 4.08 | 2 | 0 | 1 | 3 |
| 14 | Greece | 1.58 | 2.16 | 1.00 | 4.74 | 2 | 1 | 2 | 5 |
| 15 | Hungary | 1.58 | 1.83 | 0.00 | 3.41 | 1 | 1 | 2 | 4 |
| 16 | Iceland | 1.75 | 2.33 | 0.00 | 4.08 | 1 | 1 | 4 | 6 |
| 17 | Ireland | 1.00 | 2.16 | 1.00 | 4.16 | 2 | 1 | 2 | 5 |
| 18 | Italy | 2.16 | 2.16 | 1.00 | 5.32 | 0 | 1 | 1 | 2 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 19 | Japan | 1.00 | 1.83 | 0.00 | 2.83 | 1 | 2 | 3 | 6 |
| 20 | Korea | 0.75 | 2.16 | 0.00 | 2.91 | 3 | 2 | 4 | 9 |
| 21 | Luxemburg | 1.25 | 2.16 | 1.00 | 4.41 | 2 | 0 | 2 | 4 |
| 22 | Mexico | 1.83 | 1.33 | 0.00 | 3.16 | 1 | 1 | 2 | 4 |
| 23 | Netherlands | 1.75 | 2.16 | 0.00 | 3.91 | 2 | 1 | 2 | 5 |
| 24 | New Zealand | 1.83 | 2.16 | 1.00 | 4.99 | 4 | 2 | 4 | 10 |
| 25 | Norway | 1.58 | 1.83 | 0.00 | 3.41 | 1 | 1 | 5 | 7 |
| 26 | Poland | 1.25 | 2.16 | 0.00 | 3.41 | 2 | 3 | 3 | 8 |
| 27 | Portugal | 0.50 | 2.16 | 1.00 | 3.66 | 2 | 1 | 2 | 5 |
| 28 | Spain | 0.75 | 2.16 | 1.00 | 3.91 | 2 | 2 | 2 | 6 |
| 29 | Sweden | 2.75 | 2.16 | 1.00 | 5.91 | 2 | 1 | 1 | 4 |
| 30 | Switzerland | 2.08 | 2.33 | 1.00 | 5.41 | 1 | 1 | 2 | 4 |
| 31 | Turkey | 1.66 | 1.83 | 0.00 | 3.49 | 2 | 1 | 3 | 6 |
| 32 | USA | 2.00 | 1.83 | 0.00 | 3.83 | 1 | 3 | 2 | 6 |

Note: For each of the thirty-two central banks, we have analysed its current or recently updated Law Act or Statutes, according to the decomposition showed in the next page.

# Table 4

## Central Bank Legal Independence and Accountability evaluation (December 2000)

Part 1 | Part 2

### Legal Independence

| Country | Personal | | | | Political | | | | | Economic and Financial | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | Total | (4) | (5) | (6) | (7) | Total | (8) | (9) | Total | |
| **Argentina** | 0,00 | 0,75 | 0,50 | 1,25 | 1,00 | 0,33 | 0,50 | 1,00 | 1,83 | 1,00 | nd | 1,00 | 4,08 |
| **Australia** | 0,00 | 0,50 | 0,00 | 0,50 | 0,00 | 0,66 | 0,50 | 1,00 | 2,16 | 0,00 | 0,00 | 0,00 | 2,66 |
| **Austria** | 0,66 | 0,50 | 0,50 | 1,66 | 1,00 | 0,66 | 0,50 | 1,00 | 2,16 | 1,00 | 1,00 | 1,00 | 4,82 |
| **Belgium** | 0,00 | 0,75 | 1,00 | 1,75 | 0,00 | 0,00 | 0,50 | 1,00 | 1,50 | 0,00 | 0,33 | 0,00 | 3,25 |
| **Canada** | 0,00 | 0,00 | 0,50 | 0,50 | 0,00 | 0,33 | 0,50 | 1,00 | 1,83 | 0,00 | 0,00 | 0,00 | 2,33 |
| **Chile** | 1,00 | 1,00 | 0,00 | 2,00 | 0,00 | 0,33 | 0,50 | 1,00 | 1,83 | 1,00 | nd | 1,00 | 4,83 |
| **Czech Republic** | 1,00 | 0,75 | 1,00 | 2,75 | 1,00 | 0,66 | 0,50 | 1,00 | 2,16 | 1,00 | nd | 1,00 | 5,91 |
| **Denmark** | 0,66 | 1,00 | 0,50 | 2,16 | 1,00 | 0,33 | 0,50 | 1,00 | 1,83 | 0,00 | nd | 0,00 | 3,99 |
| **ECB** | 1,00 | 1,00 | 0,50 | 2,50 | 1,00 | 0,66 | 1,00 | 1,00 | 2,66 | 1,00 | 1,00 | 1,00 | 6,16 |
| **England** | 0,00 | 0,00 | 1,00 | 1,00 | 0,00 | 0,66 | 1,00 | 1,00 | 2,66 | 0,00 | 0,00 | 0,00 | 3,66 |
| **Finland** | 1,00 | 0,50 | 1,00 | 2,50 | 1,00 | 0,66 | 1,00 | 1,00 | 2,66 | 1,00 | 0,00 | 1,00 | 6,16 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **France** | 0,00 | 1,00 | 0,50 | 1,50 | 1,00 | 0,66 | 0,50 | 1,00 | 2,16 | 1,00 | 0,00 | 1,00 | 4,66 |
| **Germany** | 0,00 | 0,75 | 0,50 | 1,25 | 1,00 | 0,33 | 0,50 | 1,00 | 1,83 | 1,00 | 0,00 | 1,00 | 4,08 |
| **Greece** | 0,33 | 0,75 | 0,50 | 1,58 | 1,00 | 0,66 | 0,50 | 1,00 | 2,16 | 1,00 | 0,66 | 1,00 | 4,74 |
| **Hungary** | 0,33 | 0,75 | 0,50 | 1,58 | 1,00 | 0,33 | 0,50 | 1,00 | 1,83 | 0,00 | 0,00 | 0,00 | 3,41 |
| **Iceland** | 0,00 | 0,75 | 1,00 | 1,75 | 1,00 | 0,33 | 1,00 | 1,00 | 2,33 | 0,00 | 0,00 | 0,00 | 4,08 |
| **Ireland** | 0,00 | 0,50 | 0,50 | 1,00 | 1,00 | 0,66 | 0,50 | 1,00 | 2,16 | 1,00 | 0,33 | 1,00 | 4,16 |
| **Italy** | 0,66 | 0,50 | 1,00 | 2,16 | 1,00 | 0,66 | 0,50 | 1,00 | 2,16 | 1,00 | 1,00 | 1,00 | 5,32 |
| **Japan** | 0,00 | 0,50 | 0,50 | 1,00 | 1,00 | 0,33 | 0,50 | 1,00 | 1,83 | 0,00 | 0,33 | 0,00 | 2,83 |
| **Korea** | 0,00 | 0,25 | 0,50 | 0,75 | 0,00 | 0,66 | 0,50 | 1,00 | 2,16 | 0,00 | nd | 0,00 | 2,91 |
| **Luxemburg** | 0,00 | 0,75 | 0,50 | 1,25 | 1,00 | 0,66 | 0,50 | 1,00 | 2,16 | 1,00 | 0,00 | 1,00 | 4,41 |
| **Mexico** | 0,33 | 1,00 | 0,50 | 1,83 | 1,00 | 0,33 | 0,00 | 1,00 | 1,33 | 0,00 | 0,00 | 0,00 | 3,16 |
| **Netherlands** | 0,00 | 0,75 | 1,00 | 1,75 | 1,00 | 0,66 | 0,50 | 1,00 | 2,16 | 0,00 | nd | 0,00 | 3,91 |
| **New Zealand** | 0,33 | 0,50 | 1,00 | 1,83 | 0,00 | 0,66 | 0,50 | 1,00 | 2,16 | 1,00 | nd | 1,00 | 4,99 |
| **Norway** | 0,33 | 0,25 | 1,00 | 1,58 | 0,00 | 0,33 | 0,50 | 1,00 | 1,83 | 0,00 | 0,00 | 0,00 | 3,41 |
| **Poland** | 0,00 | 0,75 | 0,50 | 1,25 | 0,00 | 0,66 | 0,50 | 1,00 | 2,16 | 0,00 | nd | 0,00 | 3,41 |
| **Portugal** | 0,00 | 0,50 | 0,00 | 0,50 | 1,00 | 0,66 | 0,50 | 1,00 | 2,16 | 1,00 | 0,00 | 1,00 | 3,66 |
| **Spain** | 0,00 | 0,25 | 0,50 | 0,75 | 1,00 | 0,66 | 0,50 | 1,00 | 2,16 | 1,00 | nd | 1,00 | 3,91 |
| **Sweden** | 1,00 | 0,75 | 1,00 | 2,75 | 1,00 | 0,66 | 0,50 | 1,00 | 2,16 | 1,00 | 0,00 | 1,00 | 5,91 |
| **Switzerland** | 0,33 | 0,75 | 1,00 | 2,08 | 1,00 | 0,33 | 1,00 | 1,00 | 2,33 | 1,00 | 1,00 | 1,00 | 5,41 |
| **Turkey** | 0,66 | 0,50 | 0,50 | 1,66 | 1,00 | 0,33 | 0,50 | 1,00 | 1,83 | 0,00 | 0,66 | 0,00 | 3,49 |
| **USA** | 0,00 | 1,00 | 1,00 | 2,00 | 0,00 | 0,33 | 0,50 | 1,00 | 1,83 | 0,00 | nd | 0,00 | 3,83 |
| **maximum:** | 1 | 1 | 1 | 3 | ---- | 1 | 1 | 1 | 3 | 1 | ---- | 1 | 7,00 |

Part 1 | Part 2

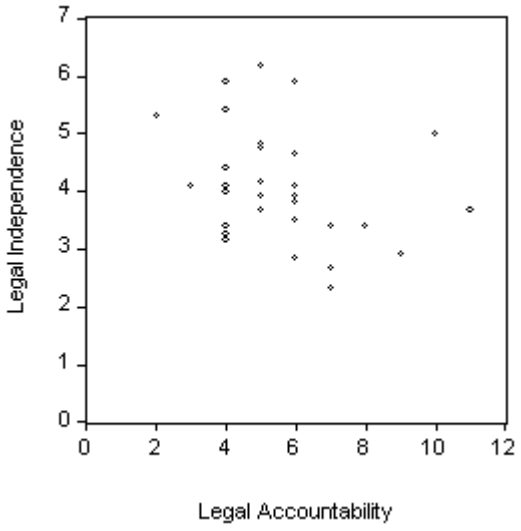
## Legal Accountability

| **Country** | **Ultimate Objectives** | | | | | **Transparency** | | | | **Final Responsibility** | | | | | | | **Total** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **(1)** | **(2)** | **(3)** | **(4)** | **Total** | **(5)** | **(6)** | **(7)** | **Total** | **(8)** | **(9)** | **(10)** | **(11)** | **(12)** | **(13)** | **Total** | |
| **Argentina** | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 4 |
| **Australia** | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 5 | 7 |
| **Austria** | 1 | 1 | 0 | 0 | 2 | 1 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 5 |
| **Belgium** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 4 | 4 |
| **Canada** | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 2 | 1 | 1 | 1 | 0 | 1 | 0 | 4 | 7 |
| **Chile** | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 3 | 5 |
| **Czech Republic** | 1 | 2 | 0 | 0 | 3 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 6 |
| **Denmark** | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 4 |
| **ECB** | 1 | 1 | 1 | 0 | 3 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 5 |
| **England** | 1 | 1 | 1 | 1 | 4 | 1 | 1 | 1 | 3 | 1 | 1 | 1 | 0 | 1 | 0 | 4 | 11 |
| **Finland** | 1 | 1 | 0 | 0 | 2 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 5 |
| **France** | 1 | 1 | 1 | 0 | 3 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 6 |
| | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Germany** | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 3 |
| **Greece** | 1 | 1 | 0 | 0 | 2 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 5 |
| **Hungary** | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 4 |
| **Iceland** | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 4 | 6 |
| **Ireland** | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 5 |
| **Italy** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| **Japan** | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 2 | 1 | 1 | 0 | 0 | 1 | 0 | 3 | 6 |
| **Korea** | 1 | 1 | 1 | 0 | 3 | 1 | 1 | 0 | 2 | 1 | 1 | 1 | 0 | 1 | 0 | 4 | 9 |
| **Luxemburg** | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 4 |
| **Mexico** | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 2 | 4 |
| **Netherlands** | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 5 |
| **New Zealand** | 1 | 1 | 1 | 1 | 4 | 1 | 0 | 1 | 2 | 1 | 1 | 0 | 0 | 1 | 1 | 4 | 10 |
| **Norway** | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 5 | 7 |
| **Poland** | 1 | 1 | 0 | 0 | 2 | 1 | 1 | 1 | 3 | 1 | 1 | 0 | 0 | 1 | 0 | 3 | 8 |
| **Portugal** | 1 | 1 | 0 | 0 | 2 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 5 |
| **Spain** | 1 | 1 | 0 | 0 | 2 | 1 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 6 |
| **Sweden** | 1 | 1 | 0 | 0 | 2 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 4 |
| **Switzerland** | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 4 |
| **Turkey** | 1 | 0 | 1 | 0 | 2 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 3 | 6 |
| **USA** | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 3 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 6 |
| **maximum:** | 1 | 1 | 1 | 1 | 4 | 1 | 1 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 6 | 13 |

# Figure 1

## Legal Independence against Legal Accountability



# Figure 2

## Legal Independence against "Final Responsibility" Accountability Aspect