

Central Bank Independence and Democratic Accountability

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(Comments welcome)

Abstract

Some academic literature maintains that high independent central banks are characterised by low democratic accountability. In this paper, we try to improve previous studies, using an alternative central bank independence index, which we suggest, in the updated measurement of a larger sample of thirty-three central banks. We confirm the conclusions achieved by those previous studies, showing evidence for a *de jure* negative correlation between central bank independence and democratic accountability. Finally, we suggest how to improve the picture, by increasing accountability, with minimum losses in independence. After all, we recommend independent and accountable central banks.

Keywords: Central Bank Independence; Credibility and Monetary Policy Delegation; Central Bank Accountability.

JEL Classification Numbers: E580; E590; E610; K100.

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1. Introduction

In the last few years, a large number of countries 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 academic level and the political acceptance, of the idea that freeing monetary policy responsibility and authority from the politicians' hands, in particular from the executive and legislative branches, it creates favourable conditions for achieving and maintaining price stability – the primary objective in a great 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 the independence would be associated to 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 became important to know how to set up the right institutions to achieve the best economic outcomes. In particular, it emerges as a solution for three problems, which will be described in the next sections.

In spite of the enormous academic work favouring CBI, some authors have argued against it. 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 it is the case of the low unemployment goal.

This paper is divided into four sections. After this introduction, in the second part we present the theoretical and empirical foundations of CBI. The third part is reserved to empirical evidence supporting the argument that there is a trade-off between independence and accountability, at least in the law. Finally, in the last part of this paper, we conclude and suggest some ideas for future research.

2. Independence – Concept and Foundations

2.1. *The Concept*

In recent years, and in the context of monetary policy, it decreased the relative concern about the “rules versus discretion” debate and increased the discussion on how we shall institutionally establish monetary authorities and what incentives should be offered to them in order to achieve price stability. This shift accompanied the revision of the Statutes of a large number of central banks, whose independence degrees increased.

In short, CBI excludes government’s interference, but in particular we can consider three interpretations of the concept. In the first place, personal independence, related to nomination and dismissal processes of the central bank board members. Secondly, financial or economic independence, which requires, among other things, the exclusion of central bank financing of the excesses of expense of the fiscal authority. Finally, political independence, related with the freedom of the monetary authority in setting its objectives (objective independence) and in choosing the instruments to achieve those objectives (instrument independence)¹.

The effective degree of autonomy² 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-inflationary social preferences. Nevertheless, we argue that it will be reasonable to use the legal texts for evaluating the degree of autonomy of a central bank when, for example, this institution does not have enough performance record, as it is the case of the European Central Bank (ECB).

¹ Debelle and Fischer (1994).

² We use the words ‘independence’ and ‘autonomy’ interchangeably.

2.2. Theoretical Foundations

The academic literature presumes that the price stability objective is not sufficiently safeguarded by elected politicians who concentrate their concerns on the short term, being tempted to choose what politically benefits them in the shortest period of time or in the next elections. Therefore, the monetary policy and the price stability objective are entrusted to technocrats that are not subject to elections and that show a longer temporal horizon. In that delegation process, it is given autonomy to selected agents for achieving the objectives that were fixed by the principal – society – or by its democratic representatives – government or parliament. In this situation, we say that agents enjoy instrument independence, but not objective independence, what is an acceptable and reasonable condition in a democracy. Nevertheless, there are central banks that enjoy both instrument and objective independence, e.g., when the objective is only vaguely established.

From the theoretical standpoint, CBI emerges as a solution to three different, but related problems. Firstly, 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 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 rests on 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 the 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 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 others) of partisan governments that act in the interest of the ideological preferences of their political constituencies.

These theories originally rested on adaptive 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 *a la* Nordhaus or *a la* Hibbs.

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

In the third place, the delegation of the monetary policy to an independent institution will reduce or will even eliminate the dynamic inconsistency of the monetary policy. This subject is related to the idea that more independent central banks convey larger credibility to an anti-inflationary policy. The basic idea of the dynamic inconsistency theory consists in the existence of an inflationary bias that emerges because one assumes that policymakers are systematically tempted to stimulate the economy, exploring the short-run Phillips Curve: although at the current moment they promise average low inflation rates, later, when the private sector has already incorporated that information in its expectations and decisions, policymakers are tempted to abandon the assumed commitments. The outcome is higher inflation without any real product 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. Basically, 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 of dynamic inconsistency, what would happen if the

policymakers' behaviour were limited by rules or by some other 'commitment technology' that could influence policymakers' incentives directly³.

In order to solve the inflationary bias problem, the literature supplied some solutions⁴ among which we find the delegation of monetary policy authority and responsibility to an agent that acts in agreement with one objective function, different from society's (and from politicians'). Basically, this solution can assume two approaches: a legislative approach, where a conservative agent is made independent from the government⁵; 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, developed 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 inflationary 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 was a proxy for the level of independence enjoyed by the central bank.

The Rogoff's solution embodies another difficulty comprised in the inability to discover an agent for central banker with the right conservative preferences. The contractual approach (or the inflation targets approach), suggested 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 agent, it could be possible to directly affect the incentives faced by the central bank. Walsh (1995), in the principal-agent context, suggests an optimal incentive contract for central bankers, in which rewards and sanctions (monetary or of some other kind, e.g., threats of dismissal) are imposed on an instrument independent

³ Albanesi et al. (2001), analysing two monetary models, found that there is not always an inflationary 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.

⁴ The first solution would be the elimination of the distortion factors that originally create *bad* policymakers' incentives.

⁵ The chosen conservative agent would enjoy instrument and objective independence.

central banker, 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. Nowadays, the example more comparable to the Walsh optimal linear contract is the Policy Targets Agreement (PTA)⁶, achieved between the Treasury and the governor of the New Zealand Federal Reserve Bank⁷.

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 effort costs (sacrifice ratio), inflation benefits, productivity growth, private investment, unemployment, real interest rates, product and inflation trade-off, fiscal deficit, and high-powered money growth⁸.

Above all, the most distinguished result refers to the negative correlation between CBI and average inflation, although without any unequivocal and significant correlation between central bank autonomy and real product. Thus, we could say that CBI is a free lunch supplying a credibility bonus. However, in spite of having found a negative correlation between CBI and inflation, it is premature to support a causality direction between the two variables. It is possible that the negative correlation between independence and inflation could be due to a third variable. Both CBI and low inflation can be two reflexes of society's inflation aversion: due to a bad inflation experience in the 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. De Jong (2001) refers another reason: the third factor that explains the negative correlation between

⁶ In this matter, see Walsh (1994).

⁷ The current Policy Targets Agreement, signed in December 1999, sets the specific targets for achieving and maintaining price stability (defined as an annual inflation rate of 0% to 3%). This agreement substitutes another that has been signed on 10th October 1996, which replaced one dated by 16th December 1992, which had had in its basis the Reserve Bank of New Zealand Act (1989).

⁸ For a survey about empirical evidence, see Eijffinger and De Haan (1996) and Berger et al. (2000).

inflation and the degree of CBI can be the national attitude towards inequality among people.

3. Central Bank Independence and Democratic Accountability

3.1. Objections Against Central Bank Independence

In spite of being backed up by empirical and theoretical arguments, CBI is subject to some critiques⁹. In the 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). 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 his doubts about 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 politician policymakers and the central bank.

In the second place, some problems are related to empirical evidence conclusions, particularly, the difficulty in measuring the effective degree of independence¹⁰; the negligence of significant variables in the explanation of the inflation; the lack of robustness in statistical correlations; the absence of causality relationships¹¹ and the sensitivity of the relationship CBI-inflation to influential observations¹².

Third, some authors argue that CBI should be considered not as a cause but as a consequence of multiple conditions, and CBI might not be nor a sufficient neither a necessary condition for price stability. Thus, one should find another reasons that justify the recent increase of the independence of central banks. Hayo and Hefeker (2001), e.g., claim that there are special conditions that explain that increase: higher costs of

⁹ See also, e.g., Blinder (1999), Bassoni and Cartapanis (1995), Neumann (1995), and Goodhart and Huang (1995).

¹⁰ Forder (1996) and Mangano (1998) discuss the fragilities of the measurement of CBI.

¹¹ Despite the critiques against empirical studies supporting CBI, Berger et al. (2000) remain arguing that countries with more independent central banks have known smaller inflation rates.

¹² Temple (1998) concluded that if inflation countries were added to his sample of OECD and developing countries, the effect of CBI on inflation would disappear.

changing the legal status of central banks in terms of political difficulties; political freedom; and labour markets characterised by weak unions.

A fourth order of criticism is based on the effects of 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 their objectives achievement. On the other hand, the worry arises that an independent central bank will be free to do what it wants to do, whatever its effects on society's welfare – this is the central bank accountability (CBA) theme¹³. This assumes special 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's¹⁴.

3.2. Central Bank: Independent and Unaccountable?

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 to 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 on 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,

¹³ "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)

¹⁴ 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.

by the effects that its behaviour has on the society's welfare and on the achievement of the objectives fixed in the central bank Statutes¹⁵.

This legitimacy mechanism is a very difficult task, mainly in those cases in which central bank Statutes widely protect it from any government interference and when the monetary authority enjoys both objective and instrument independence. In the context of this discussion, Amttenbrink (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.

3.3. Empirical Evidence on Independence and Accountability

3.3.1. Previous contributions

In the context of empirical studies on CBA, it emerges a problem that consists in finding 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 estimates based on Havrilesky index overlapped with CBI indexes, Briault et al. (1996) suggested another measure 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 banks¹⁶, 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

¹⁵ “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).

inflation seemed to be characterized by low accountability levels, happening the opposite in the cases of less respectable reputation countries. This evidence would support 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 contributors¹⁷, De Haan et al. (1998) provides a more detailed quantification of the CBA concept¹⁸ and the analysis of the laws in vigour at 1997 with respect to a sample of sixteen central banks¹⁹. Making simple regressions of CBI on accountability aspects, they concluded that there seemed to be a positive relationship between CBI and the 'objectives' accountability aspect (although this relationship was very weak), and negative relationships between CBI and the other two accountability aspects – 'transparency' and 'final responsibility for monetary policy', the latter being the more significant. Finally, they also presented evidence for a negative (though weak) relationship between CBI and CBA.

3.3.2. Additional empirical contribution – measures and indexes

The conclusions of the previous empirical studies, on the relationship between CBI and CBA, might be affected by three issues, which we try to improve in this paper.

First of all, the evaluation of CBA (and the conclusions) depends on the laws in force at the date of the analysis. Because some of those laws have been updated (especially those that respect to some European central banks), we can try to find if those

¹⁶ Central Banks of: United Kingdom, New Zealand, USA, Canada, Spain, Sweden, Australia, France, Italy, Japan, Belgium, Netherlands, Switzerland and Germany.

¹⁷ 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).

¹⁸ See the description of this CBA index in Appendix 1.B of this paper.

modifications have had impact on the CBI-CBA relationship. In this paper, we use the laws that were in force in January 2002.

In the second place, previous contributions to the discussion used a not very large sample – the largest was sixteen central banks. In this paper, we use a larger sample: thirty-three central banks (all the OECD central banks, ECB and two central banks from the south of America: Argentina and Chile).

Finally, the conclusions could also be affected by the measurement of CBI. In this respect, Briault, et al. (1996), Nolan and Schaling (1996) and De Haan et al. (1998) considered the ES index (Eijffinger and Schaling, 1993²⁰). The first of these three studies added also a fourth aspect to the index: “whether the central bank does in practice set its own goals”. Despite that effort, with these criteria it could not be easy to get a reasonable central bank differentiation. It would be better to expand the criteria, by which each central bank is evaluated in what respects to independence. We try that, suggesting an alternative legal CBI index²¹.

The legal CBI index, that we suggest, is built following the autonomy aspects underlined by the European Monetary Institute (EMI), in its Report of Convergence (November of 1996), not neglecting, however, the vast previous and valuable contributions.

We divide the independence into three types, in compliance with the description done in the section (2.1) of this paper. In what respects to the first type – personal independence – we consider three aspects: (1) appointment of the central bank board members; (2) mandate duration of more than half of the central bank board members; and (3) government participation at central bank meetings.

¹⁹ 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.

²⁰ The Eijffinger-Schaling (ES) index of independence is determined using only three criteria: “(1) *Is the bank the sole final policy authority, is this authority not entrusted to the central bank alone, or is it entrusted completely to the government?* (2) *Is there no government official on the bank board?* (3) *Are more than half of the board appointments made independent of the government?*”.

²¹ Although we can argue that a CBI legal index 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).

In the measure of the second type – political independence – we consider four aspects: (4) ultimate responsibility and authority on monetary policy decisions; (5) price stability as the objective of the central bank; (6) banking supervision²²; and (7) monetary policy instruments.

Finally, the third type – economic and financial independence – is quantified by considering the aspects: (8) government financing by the central bank; and (9) ownership of the central bank's (equity) capital.

For each of these aspects, we identify the best, the middle and the worst situations established in the law for each central bank. As can be seen in the Appendix 1.A, we rank (from the best to the worst) the possible situations in each of the aspects, assigning points (from 1 to 0 points). Finally, for each central bank, we sum all the partial quantifications to obtain the legal CBI degree.

Having read and analysed the statutes of thirty-three central banks, and applied the alternative legal CBI index and the De Haan et al. (1998)'s CBA index, we obtain the values presented in the appendix 2 (Tables A-1 and A-2).

3.3.3. Additional empirical contribution – evidence

With the data presented in the appendix 2, we tried to find which is the relationship between CBA and CBI in the current central banks statutes. Have the three improvements (updated laws and evaluations, large sample and an alternative CBI index) any influence in the conclusions of previous studies?

In order to answer that question, we have determined some simple linear correlations, between CBI and CBA²³, and also between CBI and the three types of CBA. We obtained negative correlations between²⁴:

²² Besides extending other previous pure legal CBI indexes, in this index it is considered that the financial and banking system supervision, when assigned to the central bank, reduces its independence. In this matter, see Eijffinger (1997) and De Haan and Van't Hag (1995). Some authors argue in favour of the separation between monetary policy and banking supervision (see Goodhart and Schoenmaker, 1995, and Di Noia and Di Giorgio, 1999).

²³ In the determination of the correlation coefficient, we exclude the fourth aspect of CBI 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 correlation. We also leave out the ninth aspect of CBI, because we do not have enough information concerning this issue for all the analysed central banks.

- CBI and CBA (corr. = - 0.42; p.value = 0.014);
- CBI and “final responsibility for monetary policy” CBA aspect (corr. = - 0.67; p.value = 0.00) ²⁵.

It seems that, despite necessary, the three improvements have not modified the conclusions of the previous contributions, applying the worries discussed in the section (3.2) of this paper.

3.4. Central Bank: Independent and Accountable

In the last section, we have found a negative correlation between CBI and CBA. We suggest that it is possible to reduce that conflict²⁶, by increasing both *de jure* and *de facto* accountability, without any relevant losses in independence because the latter remains important, even though nowadays central bankers abstain from trying to maintain output above its natural level, since they now understand that the long-run Phillips Curve is vertical.

In order to increase *de jure* accountability, we suggest two ways. First, not only imposing legal requirements for the central bank to report to parliament and to explain its behaviour, but also empowering parliament with instruments to monitor more accurately the policy decisions; and second, making clear legal statements and establishing objectives prioritisation. Both imply improvement on CBI and CBA.

Nevertheless, it will be easier if one is able to improve the picture without changing the law, which could be done by increasing *de facto* accountability, through *de facto* transparency²⁷, not forgetting that this is not only openness – the supplied information must be easily understandable. In this context, and drawing attention for some

²⁴ See details in appendix 3, in this paper.

²⁵ 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.

²⁶ After all, “Accountability can thus be seen as a complement, if not a necessary requirement, for independence.” (Bini Smaghi, 1998, p. 4).

²⁷ We are conscious of the *de facto* transparency efforts made by several central banks, despite their incentives to use some ambiguity in monetary policy.

accountability dimensions, Winkler (2000) defines transparency by considering its four elements: openness; clarity; common understanding; and honesty; and Geraats (2000a) refers to other different transparency classification: political; economic; procedural; policy; and operational or market transparencies.

Nowadays, we find a wide academic and political audience favouring transparency in monetary policy, which bases their arguments on its presumable favourable effects²⁸. More transparency reduces uncertainty in monetary policy – the public is able to make more accurate inferences about the monetary authority’s objectives, making wrong expectations much less likely²⁹ and reducing the probability of unfavourable answers to central bank decisions and announcements³⁰. In this context, private expectations and central bank reputation become more sensitive to central bank behaviour. By this way, it generally increases the central bank’s costs from abandoning an announced policy, decreasing the incentive to try that. As a consequence, we would have lower variability of inflation and lower inflationary bias, increasing social welfare. Central bank accountability (improved by a reasonably increased transparency) could therefore be an implicit mechanism of commitment, enhancing monetary policy credibility and requiring even less necessary independence for the central bank³¹. At the same time, more transparency, improving accountability, increase the likelihood of social acceptance of an increased CBI.

Note however, that an extreme level of transparency can be counterproductive (Faust and Svensson, 2000). In spite of its advantages, transparency can also show a drawback: precisely because it reduces uncertainty, higher transparency can imply lower flexibility in the reactions of a central bank. Indeed, more transparency shifts the balance of credibility *versus* flexibility in direction to the former. Therefore, achieving

²⁸ An example of the increasing importance of transparency is the International Monetary Fund “Code of Good Practices on Transparency in Monetary and Financial Policies” (IMF, 2000).

²⁹ Nolan and Schaling (1996) argued that several countries with independent central banks had tried to reduce inflation expectations, by increasing the accountability and transparency of monetary policy.

³⁰ The good effects of transparency are illustrated in the case of New Zealand, since changes in the interest rate and in exchange rates anticipate central bank decisions, adjusting to a level where monetary conditions are consistent with inflation objectives. (Haldane, 1996).

³¹ Geraats (2000b) shows that greater transparency about the economic shocks to which the central bank responds exert discipline in its actions and reduces its incentive to stimulate output. However, greater transparency about the central bank’s preferences could worsen the inflationary bias, thereby requiring a higher level of independence. These contrary effects underline that is important to see which type of transparency is discussed.

accountability through transparency is especially attractive for countries that face a serious credibility problem (Eijffinger et al., 2000)³².

There is a solution that provides a healthy compromise between CBI and CBA, eliminates inflationary bias and, at the same time, enables central bank to react to shocks. It consists in a contract between the central bank and the government. In this contractual solution developed by Walsh (1995) and Persson and Tabelinni (1993), it is not only the setting of an inflation target that promotes accountability; is it also, the existence of a sanction over the central banker³³. This contract requires that the society (or elected government) can monitor the central bank, what involves transparency efforts by the monetary authority. In the context of the ECB, that solution could be valuable to improve its institutional framework.

4. Concluding Remarks

In recent years, we have been observing a modification in the institutional relationship between central banks and governments (and parliaments). This institutional change, motivated by an increase in central bank independence, is backed up by social, political and academic support. However, some authors argue against it, underlining some theoretical and empirical doubts, but also pointing out that central bank autonomy conflicts with the accountability of the institution that must answer by its behaviour, since its activity affects society's welfare.

If the central bank is endowed with an *overall* independence (both of objectives and instruments), it is probable that he will neglect society's preferences, only acting in order to achieve price stability, and reducing the value of other economic goals. Recently, the literature has shown empirical evidence for a negative correlation between independence and democratic accountability.

³² See also Gersbach (1998) and Jensen (2001).

³³ In New Zealand, it is even possible to dismiss the central bank governor, if he does not achieve the objectives early contracted.

In this paper, beyond having defined an alternative and simple central bank legal independence index, we expanded the sample used by previous studies, to include now thirty-three central banks, whose current statutes we analysed, in order to quantify their degrees of legal independence and accountability. With that data, we have found a negative correlation between CBI and CBA and we suggest solutions to reduce it, trying to achieve a compromise between the two concepts. On one hand, one should try to increase *de jure* accountability through two ways: first, central bank must report to parliament, which should be empowered with accurate instruments to monitor monetary decisions; and second, there should be clear legal statements and prioritisation about monetary policy objectives. On the other hand, it should be possible to reduce the negative relationship, increasing *de facto* accountability, through, especially, transparency in central bank activity. We think that this last effort would not reduce the independence enjoyed by central banks.

The suggestions we are presenting here imply, therefore, instrument independence and objective dependence, jointly with adequate mechanisms to make the central bank more accountable to the society it must serve. After all, what we want is an (instrument) independent and accountable central bank.

This work could be extended, asking which is better: a collective (all the members of the central bank board) accountability or an individual one. We could also try to find any relationship between CBA (mainly transparency) and inflation (average and variability), looking for a substitution relationship between CBI and CBA. We leave these extensions for future work.

Appendix 1

Legal Independence and Democratic Accountability Indexes – Methodology

Appendix 1.A – Alternative Legal Independence Index – Criteria and Methodology

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

	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
	b) It is one of the central bank functions or objectives, where we find also price stability as a policy objective.	0.50
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 bank's 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

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 correlation. 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-three 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 A-1 - Evaluation matrix of central bank independence and accountability

	Country	Independence					Accountability			
		Personal	Political	Economic and Financial	Total (a)	Total (b)	Ultimate objectives	Transparency	Final responsibility	Total
1	Argentina	1.25	2.83	1.00	4.08	5.08	1	1	2	4
2	Australia	0.50	2.16	0.00	2.66	2.66	1	1	5	7
3	Austria	1.66	3.16	1.00	4.82	5.82	2	2	1	5
4	Belgium	1.75	1.50	0.00	3.25	3.25	0	0	4	4
5	Canada	0.50	1.83	0.00	2.33	2.33	1	2	4	7
6	Chile	2.00	1.83	1.00	4.83	4.83	1	1	3	5
7	Czech Republic	1.58	3.16	1.00	4.74	5.74	2	2	2	6
8	Denmark	2.16	2.83	0.00	3.99	4.99	1	1	2	4
9	EMU - ECB	2.50	3.66	1.00	6.16	7.16	3	1	1	5
10	England	1.00	2.66	0.00	3.66	3.66	4	3	4	11
11	Finland	2.50	3.66	1.00	6.16	7.16	2	1	2	5
12	France	1.50	3.16	1.00	4.66	5.66	3	1	2	6
13	Germany	1.50	3.16	1.00	4.66	5.66	2	0	2	4
14	Greece	1.91	3.16	1.00	5.07	6.07	2	1	1	4
15	Hungary	1.91	3.66	1.00	5.57	6.57	2	1	2	5
16	Iceland	1.75	3.33	0.00	4.08	5.08	1	1	4	6
17	Ireland	1.00	3.16	1.00	4.16	5.16	2	1	2	5
18	Italy	2.16	3.16	1.00	5.32	6.32	0	1	1	2
19	Japan	0.75	3.66	0.00	3.41	4.41	2	2	3	7
20	Korea	0.75	2.16	0.00	2.91	2.91	3	2	4	9
21	Luxemburg	1.25	3.16	1.00	4.41	5.41	2	0	2	4
22	Mexico	1.83	2.33	0.00	3.16	4.16	1	1	2	4
23	Netherlands	2.41	3.16	0.00	4.57	5.57	2	0	2	4
24	New Zealand	1.83	2.16	1.00	4.99	4.99	4	2	4	10
25	Norway	1.58	1.83	0.00	3.41	3.41	1	1	5	7
26	Poland	1.25	2.16	0.00	3.41	3.41	2	3	3	8
27	Portugal	1.50	3.16	1.00	4.66	5.66	2	2	1	5
28	Slovakia Republic	1.00	3.50	1.00	4.50	5.50	2	1	1	4
29	Spain	0.75	3.16	1.00	3.91	4.91	2	2	2	6
30	Sweden	2.75	3.16	1.00	5.91	6.91	2	1	1	4
31	Switzerland	2.08	3.33	1.00	5.41	6.41	1	1	2	4
32	Turkey	1.66	2.83	0.00	3.49	4.49	2	1	3	6
33	USA	2.00	1.83	0.00	3.83	3.83	1	3	2	6

Note:

For each of the thirty-three central banks, we have analysed its current or recently updated Law Act or Statutes (which were in force in January 2002), according to the decomposition showed in the next page, where we explain the meaning of “Total (a)” and “Total (b)”.

Appendix 2

Table A-2 - Central Bank Legal Independence and Accountability evaluation (January 2002)

Country	Legal Independence													Legal Accountability																	
	Personal				Political				Economic and Financial			Total		Ultimate Objectives					Transparency				Final Responsibility				Total				
	(1)	(2)	(3)	total	(4)	(5)	(6)	(7)	total	(8)	(9)	total	(a)	(b)	(1)	(2)	(3)	(4)	total	(5)	(6)	(7)	total	(8)	(9)	(10)		(11)	(12)	(13)	total
Argentina	0.00	0.75	0.50	1.25	1.00	0.33	0.50	1.00	2.83	1.00	nd	1.00	4.08	5.08	1	0	0	0	1	0	0	1	1	1	0	0	0	1	0	2	4
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	2.66	1	0	0	0	1	1	0	0	1	1	1	1	1	1	0	5	7
Austria	0.66	0.50	0.50	1.66	1.00	0.66	0.50	1.00	3.16	1.00	1.00	1.00	4.82	5.82	1	1	0	0	2	1	0	1	2	1	0	0	0	0	0	1	5
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	3.25	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	4	4
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	2.33	1	0	0	0	1	1	0	1	2	1	1	1	0	1	0	4	7
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	4.83	1	0	0	0	1	1	0	0	1	0	1	1	0	1	0	3	5
Czech Rep.	0.33	0.75	0.50	1.58	1.00	0.66	0.50	1.00	3.16	1.00	nd	1.00	4.74	5.74	1	1	0	0	2	1	0	1	2	1	0	0	0	1	0	2	6
Denmark	0.66	1.00	0.50	2.16	1.00	0.33	0.50	1.00	2.83	0.00	nd	0.00	3.99	4.99	1	0	0	0	1	0	0	1	1	1	0	0	0	1	0	2	4
ECB	1.00	1.00	0.50	2.50	1.00	0.66	1.00	1.00	3.66	1.00	1.00	1.00	6.16	7.16	1	1	1	0	3	0	0	1	1	1	0	0	0	0	0	1	5
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	3.66	1	1	1	1	4	1	1	1	3	1	1	1	0	1	0	4	11
Finland	1.00	0.50	1.00	2.50	1.00	0.66	1.00	1.00	3.66	1.00	0.00	1.00	6.16	7.16	1	1	0	0	2	1	0	0	1	1	0	0	0	1	0	2	5
France	0.00	1.00	0.50	1.50	1.00	0.66	0.50	1.00	3.16	1.00	0.00	1.00	4.66	5.66	1	1	1	0	3	0	0	1	1	1	0	0	0	1	0	2	6
Germany	0.00	1.00	0.50	1.50	1.00	0.66	0.50	1.00	3.16	1.00	0.00	1.00	4.66	5.66	1	1	0	0	2	0	0	0	0	1	0	0	0	1	0	2	4
Greece	0.66	0.75	0.50	1.91	1.00	0.66	0.50	1.00	3.16	1.00	0.66	1.00	5.07	6.07	1	1	0	0	2	1	0	0	1	1	0	0	0	0	0	1	4
Hungary	0.66	0.75	0.50	1.91	1.00	0.66	1.00	1.00	3.66	1.00	0.00	1.00	5.57	6.57	1	1	0	0	2	1	0	0	1	1	0	0	0	1	0	2	5
Iceland	0.00	0.75	1.00	1.75	1.00	0.33	1.00	1.00	3.33	0.00	0.00	0.00	4.08	5.08	1	0	0	0	1	1	0	0	1	1	1	1	0	1	0	4	6
Ireland	0.00	0.50	0.50	1.00	1.00	0.66	0.50	1.00	3.16	1.00	0.33	1.00	4.16	5.16	1	1	0	0	2	0	0	1	1	1	0	0	0	1	0	2	5
Italy	0.66	0.50	1.00	2.16	1.00	0.66	0.50	1.00	3.16	1.00	1.00	1.00	5.32	6.32	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	1	2
Japan	0.00	0.25	0.50	0.75	1.00	0.66	1.00	1.00	3.66	0.00	0.33	0.00	3.41	4.41	1	1	0	0	2	0	1	1	2	0	1	1	0	1	0	3	7
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	2.91	1	1	1	0	3	1	1	0	2	1	1	1	0	1	0	4	9
Luxemburg	0.00	0.75	0.50	1.25	1.00	0.66	0.50	1.00	3.16	1.00	0.00	1.00	4.41	5.41	1	1	0	0	2	0	0	0	0	1	0	0	0	1	0	2	4
Mexico	0.33	1.00	0.50	1.83	1.00	0.33	0.00	1.00	2.33	0.00	0.00	0.00	3.16	4.16	1	0	0	0	1	0	0	1	1	1	0	0	0	0	1	2	4
Netherlands	0.66	0.75	1.00	2.41	1.00	0.66	0.50	1.00	3.16	0.00	nd	0.00	4.57	5.57	1	1	0	0	2	0	0	0	0	1	0	0	0	1	0	2	4
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	4.99	1	1	1	1	4	1	0	1	2	1	1	0	0	1	1	4	10
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	3.41	1	0	0	0	1	0	1	0	1	1	1	1	1	1	0	5	7
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	3.41	1	1	0	0	2	1	1	1	3	1	1	0	0	1	0	3	8
Portugal	0.00	0.50	1.00	1.50	1.00	0.66	0.50	1.00	3.16	1.00	0.00	1.00	4.66	5.66	1	1	0	0	2	1	1	0	2	0	0	0	0	1	0	1	5
Slovakia Rep.	0.00	0.50	0.50	1.00	1.00	1.00	0.50	1.00	3.50	1.00	0.00	1.00	4.50	5.50	1	1	0	0	2	1	0	0	1	0	0	0	0	1	0	1	4
Spain	0.00	0.25	0.50	0.75	1.00	0.66	0.50	1.00	3.16	1.00	nd	1.00	3.91	4.91	1	1	0	0	2	1	0	1	2	1	0	0	0	1	0	2	6
Sweden	1.00	0.75	1.00	2.75	1.00	0.66	0.50	1.00	3.16	1.00	0.00	1.00	5.91	6.91	1	1	0	0	2	1	0	0	1	1	0	0	0	0	0	1	4
Switzerland	0.33	0.75	1.00	2.08	1.00	0.33	1.00	1.00	3.33	1.00	1.00	1.00	5.41	6.41	1	0	0	0	1	1	0	0	1	0	0	0	0	1	1	2	4
Turkey	0.66	0.50	0.50	1.66	1.00	0.33	0.50	1.00	2.83	0.00	0.66	0.00	3.49	4.49	1	0	1	0	2	1	0	0	1	0	1	0	1	1	0	3	6
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	3.83	1	0	0	0	1	1	1	1	3	1	0	0	0	1	0	2	6
maximum:	1	1	1	3	1	1	1	1	4	1	---	1	7.00	8.00	1	1	1	1	4	1	1	1	3	1	1	1	1	1	1	6	13

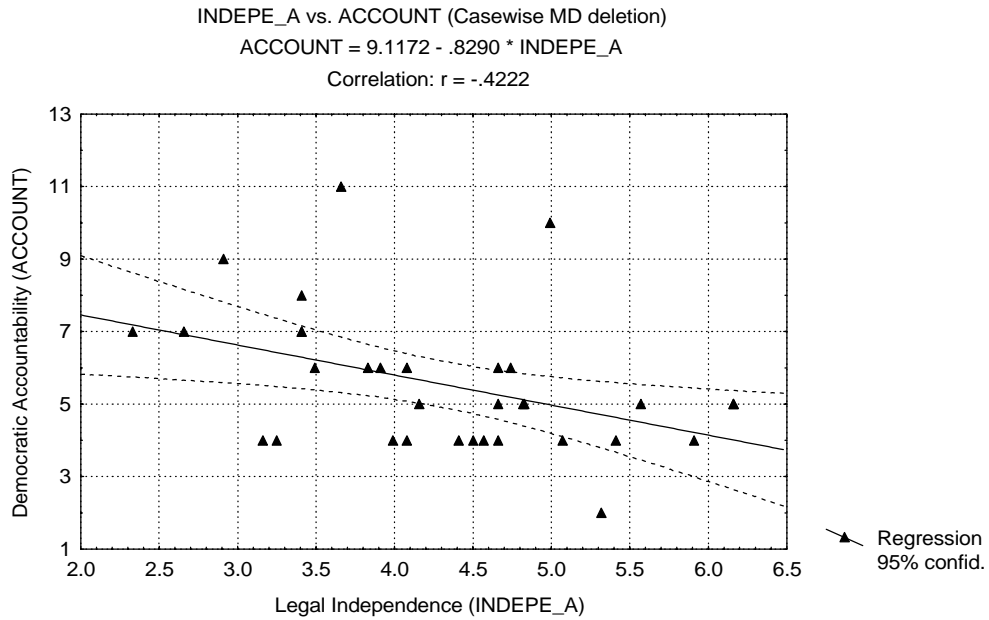
Notes: (a): excluding independence aspects 4 and 9.

(b): including independence aspect 4 and excluding independence aspect 9.

Appendix 3

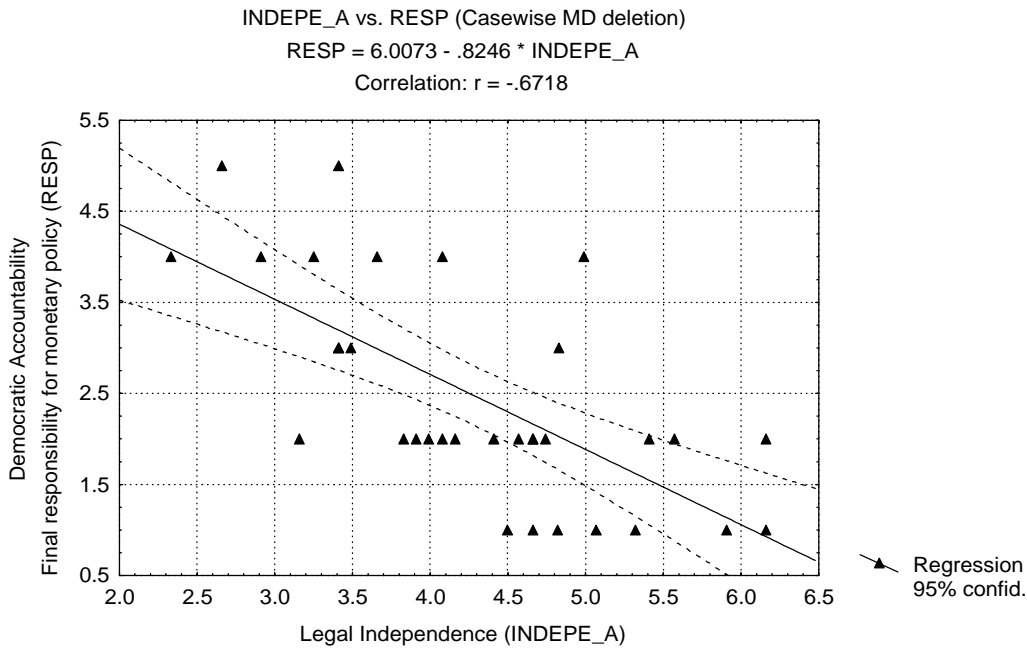
Empirical evidence – simple linear correlations

Fig. 1 – Independence vs Democratic Accountability



(p.value = 0.014)

Fig. 2 – Independence vs “final responsibility” Democratic Accountability aspect



(p.value = 0.00)

[Outputs from “Statistica 5.5. '99 Edition”]

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