

Romelli, Davide

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## Trends in central bank independence: A de-jure perspective

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# TRiSS Working Paper Series

## TRiSS-WPS-01-2024

### Trends in central bank independence: a de-jure perspective\*

Davide Romelli

Trinity College Dublin, Ireland

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#### Abstract

This paper presents an extensive update to the Central Bank Independence - Extended (CBIE) index, originally developed in [Romelli \(2022\)](#), extending its coverage for 155 countries from 1923 to 2023. The update reveals a continued global trend towards enhancing central bank independence, which holds across countries' income levels and indices of central bank independence. Despite the challenges which followed the 2008 Global financial crisis and the recent re-emergence of political scrutiny on central banks following the COVID-19 pandemic, this paper finds no halt in the momentum of central bank reforms. I document a total of 370 reforms in central bank design from 1923 to 2023 and provide evidence of a resurgence in the commitment to central bank independence since 2016. These findings suggest that the slowdown in reforms witnessed post-2008 was a temporary phase, and that, despite increasing political pressures on central banks, central bank independence is still considered a cornerstone for effective economic policy-making.

**Keywords:** Central banking, central bank independence, central bank governance, legislative reforms.

**JEL classification:** E58, G28, N20.

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\*Department of Economics, Trinity College Dublin, Ireland. Email: [romellid@tcd.ie](mailto:romellid@tcd.ie). I would also like to thank Etienne Farvaque, Alexander Jung, Andreas Kern and Donato Masciandaro for their feedback. Simone Brustio, Davide Davies-Biletta and Aashana Yadav provided excellent research assistance. I gratefully acknowledge financial support from the 2022-23 Trinity Research in Social Sciences (TRiSS) Academic Research Fellowships and the 2023-24 Arts and Social Sciences Benefaction Fund. The data discussed in this paper is available at <https://dromelli.github.io/cbidata/index.html> and will be periodically updated by the authors. Any errors or omissions are solely those of the author.

# 1 Introduction

Over the past fifty years, central banks around the world have progressively increased their degree of central bank independence. This was often reflected in a progressive move towards narrowing their mandates towards the goal of achieving price stability. This convergence was prompted by two main global drivers (Cukierman, 2008). First, a worldwide quest for price stability was prompted by the chronic inflation that characterized advanced economies in the 1970s and 1980s. These events favoured the diffusion of theoretical and empirical studies on central bank governance. For example, Rogoff (1985) emphasizes the importance of delegating monetary policy decisions to a central banker that places a larger weight on inflation relative to employment stabilization. In this context, an independent policymaker might be able to implement credible monetary policies that would favour a lower inflation rate, thus eliminating the time inconsistency problem of government policies (Kydland and Prescott, 1977). Second, globalization boosted the degree of independence of monetary authorities since the progressive exposure to foreign trade, investments and the widening of international capital markets have stressed the importance of central bank independence as a signal of macroeconomic nominal responsibility to domestic and international investors. At the same time, international institutions such as the IMF and the World Bank started recognizing higher levels of independence as a desirable institutional feature and actively promoted central bank reforms in this direction.

In this context, Rogoff's (1985) seminal paper had a twofold effect by stimulating the implementation of central bank reforms, on the policy side, and creating avenues for the design of indices suitable to capture the degree of independence of these institutions, on the research side. Starting with Bade and Parkin (1988), various studies have developed indices that proxy central bank independence, hereafter referred to as CBI (e.g. Alesina, 1988; Grilli et al., 1991; Cukierman et al., 1992; Alesina and Summers, 1993; Jácome and Vazquez, 2008). Following the introduction of these indicators, a burgeoning empirical literature began examining the relationship between CBI and inflation, economic growth and other macroeconomic variables.<sup>1</sup>

Yet, the optimal institutional arrangement for monetary authorities as *independent* central banks anchored to an inflation target has been severely questioned following the 2008 Global financial crisis (Alesina and Stella, 2010). For example, many have argued that the narrowing of the objectives of central banks to inflation targeting has failed to allow monetary policy to react to other macroeconomic developments. Consequently, a growing

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<sup>1</sup>For a meta-regression analysis of the studies examining the relationship between inflation and central bank independence, see Klomp and De Haan (2010). Masciandaro et al. (2020) offer a comprehensive review of the empirical literature exploring the connection between central bank independence, inflation, and various macroeconomic factors. Carriere-Swallow et al. (2016) and Jácome et al. (2022) investigate the historical evolution of the relationship between central bank independence and inflation in Latin America.

literature is concerned with understanding whether new institutional arrangements are needed for central banks (Issing, 2013; Taylor, 2013).

Following the COVID-19 pandemic, the rise in consumer price inflation and monetary policy tightenings experienced by many economies have contributed to the re-emergence of central bank independence as a major concern among politicians. In recent years, prominent politicians have voiced concerns about the role of independent central banks and proposed reviewing or even curtailing their independence (CNBC, 2022). For instance, former US President Donald Trump openly criticized the Federal Reserve’s four interest rate hikes in 2018 (Binder, 2021; Bianchi et al., 2023). Similarly, European leaders expressed concerns over the European Central Bank’s rapid interest rate increases in 2022 and its potential impact on economic growth (Politico, 2022).<sup>2</sup> On the other hand, academics and central bankers alike continue to uphold central bank independence as a fundamental pillar of sound economic policy-making (Rajan, 2016; Rogoff, 2021; Haldane, 2020; Jordan, 2022; Plosser, 2022; Powell, 2023; Moschella, 2024).

To contribute to a better understanding of the evolution of central bank institutional design in recent years, this paper updates the CBI - Extended (CBIE) index in Romelli (2022) to document trends in central bank independence for 155 countries during the period 1923-2023, extending, therefore, the sample period of the CBIE index by six years so that it now ends in 2023. The period of coverage of the CBIE index is also extended backwards, as the data presented in this paper do not start in 1972, i.e. post-Bretton Woods, but rather on the year of the first available legislation, i.e. 1923 for Colombia, 1933 for New Zealand, 1934 for India, etc. As in the previous version of the database, the construction of the CBIE index of central bank design relies on a thorough examination of the legislation available on central banks’ websites and, especially for older statutes, on the documents obtained from these institutions or collected from different libraries around the world.<sup>3</sup> Finally, thanks to the overlap between the CBIE index and the classical indices of central bank independence, i.e. the Grilli et al. (1991) and the Cukierman et al. (1992) ones, the paper also presents some of the stylized facts on the evolution of these indices.

This historical exploration allows us to identify a total of 370 reforms in central bank design, of which 279 are classified as improvements and 91 as reversals in CBI. This paper documents further increases in central bank independence regardless of the measure used to capture independence and the level of countries’ economic development. Indeed, following a slowdown in reforms between 2010 and 2015, improvements in central bank independence

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<sup>2</sup>Sanna Marin, former prime minister of Finland, was among the first European leaders to reopen this debate. In early October 2022, various newspapers reported the news about her retweet of an article followed by the quote: “There is something seriously wrong with the prevailing ideas of monetary policy when central banks protect their credibility by driving economies into recession” Financial Times (2022).

<sup>3</sup>The full list of analysed legislations is available at <https://dromelli.github.io/cbidata/legislations.html>.

restarted in 2016 as independence increased on 47 occasions, while it declined on only 9.

The remainder of the paper is organized as follows. Section 2 discusses the construction of the Grilli et al. (1991), Cukierman et al. (1992) and the CBIE indices. Section 3 presents some descriptive statistics. Section 4 assesses recent developments in central bank institutional design, while Section 5 concludes.

## 2 Indices of central bank independence

This section provides an overview of the two most commonly used indices of central bank independence presented in Grilli et al. (1991) and Cukierman et al. (1992), and discusses the main characteristics of the CBIE index introduced in Romelli (2022).<sup>4</sup>

### 2.1 The Grilli, Masciandaro, and Tabellini Index

Grilli et al. (1991) construct the first composite index of CBI (hereafter, GMT) through a comprehensive codification of the central bank legislation of 18 advanced economies as of 1989. The GMT index is calculated as the sum of central banks' fulfilment of 15 criteria and ranges from zero (least independent) to 16 (most independent). Importantly, this index allows the identification of a political and an economic independence index.

The political independence index is based on a binary codification of eight different characteristics that summarize the ability of monetary authorities to independently achieve the final goals of their policy. This index captures three main aspects of monetary policy institutions: the procedure for appointing the members of the main central bank governing body, the relationship between the central bank and the government, and the formal responsibilities of the central bank. Starting from these three aspects, one point is assigned for each of the following criteria, if satisfied: (1) the governor is appointed without government involvement; (2) the governor is appointed for more than five years; (3) the other members of the central bank board are appointed without government involvement; (4) the other board members are appointed for more than five years; (5) there is no mandatory participation of government representatives in the board; (6) no government approval is required for the formulation of monetary policy; (7) the central bank is legally obliged to pursue monetary stability as one of its primary objectives; and (8) the legal provisions that strengthen the central bank's position in the event of a conflict with the government.

The economic independence index summarizes the degree of independence of central banks in choosing their monetary policy instruments. Its three main aspects concern: the

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<sup>4</sup>See Masciandaro et al. (2020) for an overview of the most important measures of *de jure* and *de facto* central bank independence used in the literature since the 1980s.

influence of the government in determining how much it can borrow from the central bank, the nature of the monetary instruments under the control of the central bank and the degree of central bank involvement in banking supervision. Again, one point is assigned for each of the following satisfied criteria: (1) there is no automatic procedure for the government to obtain direct credit from the central bank; (2) when available, direct credit facilities are extended to the government at market interest rates; (3) direct credit facilities are temporary; (4) direct credit facilities are for a limited amount; (5) the central bank does not participate in the primary market for public debt; (6) the central bank is responsible for setting the policy rate; and (7) the central bank has no responsibility for overseeing the banking sector (two points) or shares its responsibility with another institution (one point).

## 2.2 The Cukierman, Webb, and Neyapti Index

The other classical measure of CBI has been developed by Cukierman et al. (1992) (henceforth, CWN), who investigate the degree of *de jure* independence for 68 countries during the period 1950-1989, therefore including a large number of developing and emerging economies. The CWN index, which also varies from 0 to 1, is calculated as the sum of the central bank's fulfilment of 16 criteria which are grouped under four main headings: 1) central bank governor; 2) policy formulation; 3) objectives of the central bank; and 4) limitations on central bank lending to the government. In particular, this index contains proxies for: (i) the length of the term of office of the governor; (ii) the entity responsible for his/her appointment; (iii) the provisions for his/her dismissal; (iv) the governor's right to hold another office; (v) the entity responsible for formulating monetary policy; (vi) the rules concerning the resolution of conflicts between the central bank and the government; (vii) the degree of the bank's participation in formulating the government budget; (viii) the primary objectives of the central bank monetary policy and the importance assigned to price stability; (ix) the limits on advances to the government; (x) the markets for securitized lending to the government; (xi) the authority responsible for setting the terms (maturity, interest rate and amount) of lending; (xii) the circle of potential borrowers from the central bank; (xiii) the types of limitations on loans; (xiv) the maturity of loans to the government; (xv) the limitations on interest rates applicable to these loans; and (xvi) the prohibitions for the central bank participation in the primary market for government securities.

While the GMT index is based on a binary codification of each one of its criteria and its overall value is obtained as the sum of the various criteria, the CWN index requires a series of further steps for its computation. First of all, every question analyzed for the

construction of the index is coded from 0 to 1, with lower values indicating a lower independence level and higher values signalling a higher degree of independence. Then the sixteen criteria are aggregated into eight different groups and the obtained values are summed up to obtain a single index that ranges from zero (no independence) to one (highest independence). Starting from these eight aggregated variables, the authors develop two indices of CBI. In particular, [Cukierman \(1992\)](#) introduces the LVAU measure, obtained as an unweighted average of the eight aggregated variables, while [Cukierman et al. \(1992\)](#) propose the LVAW measure, in which a different weight is assigned to the various aggregations.

The baseline construction of the CWN is also employed in [Jácome and Vazquez \(2008\)](#) who propose an extension of the LVAW index, by introducing some modifications to the subcategories of this index and incorporating an additional category on central bank accountability. Similarly, [Dincer and Eichengreen \(2014\)](#) augment the LVAU and LVAW indices by adding additional aspects of central bank independence such as a measure of limits on the reappointment of the central bank governor, measures of provisions affecting the (re)appointment of other board members similar to those of the governor, restrictions on government representation on the board and intervention of the government in exchange rate policy formulation.

### 2.3 The Central Bank Independence - Extended (CBIE) Index

Using the GMT and CWN indices as a starting point, [Romelli \(2022\)](#) develops a new and comprehensive index of central bank independence that covers a wider range of central bank characteristics. This new index, called the Central Bank Independence - Extended (CBIE) Index, provides, in its most disaggregated format, information on 42 criteria of central bank institutional design.

The extended index incorporates the characteristics of *both* the GMT and CWN indices. This aggregation aims to overcome the main criticism of these classical measures of CBI, i.e. the fact that only nine characteristics are common to both indices, out of a respective total of 15 in GMT and 16 in CWN (see [Mangano, 1998](#)). Apart from integrating these two well-known indices, the CBIE index also includes new criteria able to capture good practices in central bank financial independence and reporting and disclosure. Table 1 presents the summary of the characteristics collected in the GMT and CWN indices, as well as, in the CBIE index.

One important innovation of the CBIE index is represented by the introduction of several criteria on financial independence and reporting and disclosure. The financial independence criterion concerns the conditions for capitalization and recapitalization of the central bank capital, the identification of the authority that determines and approves the



Table 1: Institutional characteristics captured by indices of central bank independence

Criteria	GMT	CWN	CBIE
<b><i>Governor and central bank board</i></b>			
Who appoints the governor	*	*	*
Term of office of the governor	*	*	*
Reappointment option for the governor			*
Dismissal of governor		*	*
Governor allowed to hold another office in government		*	*
Qualification requirements for governor			*
Who appoints the board members	*		*
Term of office of board members	*		*
Reappointment option for board members			*
Dismissal of board members			*
Board members allowed to hold another office in government			*
Qualification requirements for board members			*
Staggering term of office for board members			*
Government representatives in the board	*		*
<b><i>Monetary policy and conflicts resolution</i></b>			
Who formulates monetary policy	*	*	*
Central bank responsible to fix key policy rates	*		*
Banking sector supervision	*		*
Central bank role in government's budget and/or debt	*		*
Final authority in monetary policy	*	*	*
<b><i>Objectives</i></b>			
Central bank's statutory goals	*	*	*
<b><i>Limitations on lending to the government</i></b>			
Direct credit: not automatic	*	*	*
Direct credit: market for lending		*	*
Who decides financing conditions to government		*	*
Beneficiaries of central bank lending		*	*
Direct credit: type of limit	*	*	*
Direct credit: maturity of loans	*	*	*
Direct credit: interest rates	*	*	*
Prohibition from buying government securities in primary market	*	*	*
<b><i>Financial independence</i></b>			
Payment of the initial capital of the central bank			*
Authorized capital of the central bank			*
Central bank financial autonomy			*
Arrangements for automatic recapitalization			*
Transfers of money from the treasury			*
Central bank approves its annual budget			*
Central bank adopt its annual balance sheet			*
Auditing agency			*
Allocation of net profits			*
Allocation of profits to a general reserve fund			*
Partial payments of dividends before the end of the fiscal year			*
Unrealized profits included in the calculation of distributable profits			*
<b><i>Reporting and disclosure</i></b>			
Central bank reporting			*
Central bank financial statements			*

Note: The table summarizes the set of information collected in the GMT (Grilli et al., 1991), CWN (Cukierman et al., 1992) and CBIE (Romelli, 2022) indices of central bank independence.



central bank’s budget, as well as the requirements for profit allocation. These last two features are of particular interest during crisis periods, when, as it happened following the 2008 Global financial crisis, the total amount of central banks’ assets increased exponentially. In this context, the presence of limits on the determination of the central banks’ budget and the distribution of their net profits, may limit their capacity to implement their monetary policy. Regarding profits allocation, in particular, [Reis \(2013\)](#) discusses the fact that, under fiscal stress, governments will always be tempted to demand the central bank to generate more profits and transfer them to the Treasury (See also [Buiter, 2020](#)).

Previous literature has also argued that central bank accountability nowadays goes in tandem with central bank independence ([Jácome and Vazquez, 2008](#); [Svensson, 2010](#); [Braun, 2016](#); [Ferrara et al., 2022](#)). The first point on reporting and disclosure clarifies the legal provisions that require central banks to report, on a regular basis, the fulfilment of their policy targets. The second one concerns the publication of the financial statements and the maximum level of independence is reached when the central bank financial statements are published on a regular basis, following international accounting standards, as well as when these statements are certified by an independent auditor.

The CBI index also expands the GMT political independence index by collecting additional information about the dismissal of the governor and other board members, as well as by identifying if the governor is legally allowed to hold other offices in the government. Moreover, the GMT economic independence index is augmented by including information on the authority responsible for setting the financial conditions for lending to the government. Finally, it should be also noticed that the CBIE index assigns, similar to the CWN index, values ranging between zero and one to every criterion, with larger values indicating a higher degree of CBI, while the GMT index mainly uses a binary codification strategy for each one of its 15 criteria.

While for most of the 42 criteria analyzed in the CBIE index, the codification strategy follows closely [Cukierman et al. \(1992\)](#), it also departs from the CWN index in several ways. First, it collects information on the appointment, terms of office and dismissal of the rest of the board members. Second, in line with GMT, it identifies if government representatives are legally required to be board members. Finally, I assess whether the central bank is the authority responsible for fixing the policy rates and if this institution is also involved in the supervision of the banking sector in the country.

The information collected is used to build an index of central bank independence which ranges from 0 (no independence) to 1 (full independence). The coding rules used for the creation of the CBIE index are summarized in Appendix [B](#). A score for each of the six dimensions of the index is obtained by assigning equal weights to each question in a given

Table 2: Measures of Central Bank Independence and Nr. of Reforms

Paper	Index	Variables	Countries	Period	Nr. of reforms
Grilli et al. (1991)	GMT	16	18	1989	–
Cukierman et al. (1992)	CWN	16	72	1950-1989	35
Cukierman et al. (2002)	CWN	16	26	1991-1998	9
Polillo and Guillén (2005)	CWN	16	91	1989-2000	60
Crowe and Meade (2008)	CWN	16	99	2003	–
Jácome and Vazquez (2008)	CWNE	17	24	1990-2002	13
Acemoglu et al. (2008)	CWN	16	52	1972-2005	40
Arnone et al. (2009)	GMT	16	162	2003	–
Dincer and Eichengreen (2014)	CBIU	24	85	1998-2010	44
Bodea and Hicks (2015)	CWN	16	83	1972-2010	108
Garriga (2016)	CWN	16	188	1970-2012	241
Romelli (2022)	CBIE	42	155	1972-2017	286
<b>This paper</b>	<b>CBIE</b>	<b>42</b>	<b>155</b>	<b>1923-2023</b>	<b>370</b>

Note: The table shows the number of countries and reforms in central bank independence identified in previous works and in this paper. GMT (Grilli et al., 1991), CWN (Cukierman, 1992), CWNE (Jácome and Vazquez, 2008), CBIU (Dincer and Eichengreen, 2014) and CBIE (Romelli, 2022) indices of CBI.

dimension.<sup>5</sup> Then, the overall index is computed as the average of the scores across these six dimensions. This guarantees that all dimensions are given the same weight in determining the level of independence. The resulting index is normalized over the interval  $[0;1]$ .

### 3 Descriptive statistics

This section provides an overview of the number of changes brought to the CBIE index throughout our analysis. To compute the level of CBI, I identify, for each country, all the years in which the central bank charter has been changed or amended over the period 1923-2023.<sup>6</sup> More than 2,000 changes to central bank legislation took place over the period of our analysis.<sup>7</sup> Yet these legislative changes may not necessarily modify, in a significant way, the institutional design of central banks. To gauge the magnitude and significance of these legislative changes, I focus my attention on reforms that change the degree of central bank independence, which has been long considered the optimal institutional design for modern central banks.

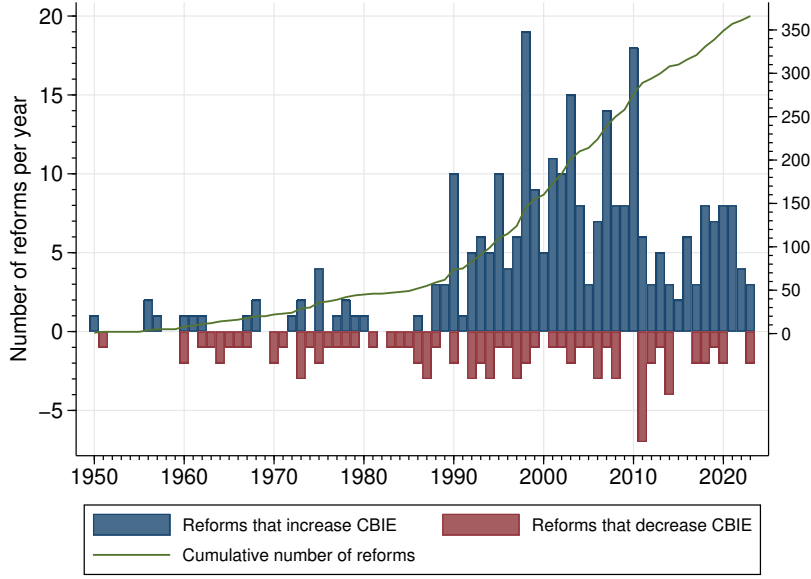
For each year in which a change to the central bank charter has occurred, I recompute the value of the CBIE index. A reform is then defined as a date on which the level of

<sup>5</sup>I opt for this simple aggregation to favour applicability, but the data availability for each dimension of the index would allow other researchers to use alternative aggregation techniques.

<sup>6</sup>See Appendix Table A for the full set of countries and information on data availability.

<sup>7</sup>Appendix Figure C.1 shows the year of the most recent central bank legislation or amendments adopted by the countries in our sample. More than 50% of the central banks in our sample (80 out of 138) have amended their central bank legislation since 2018. This confirms the idea that central bank legislative reforms are quite frequent.

Figure 1: Central Bank legislative reforms (1950-2023)



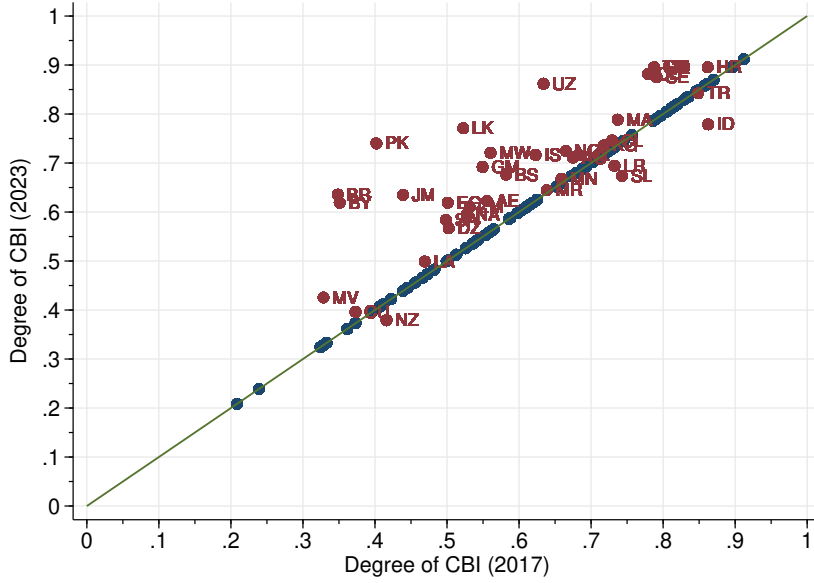
Note: The figure shows the frequency of reforms that increased/decreased the CBIE index, together with the cumulative number of reforms in central bank independence between 1950 and 2023.

the CBIE index changes. This also allows the construction of an index of central bank independence that changes over time. Table 2 shows that the index introduced in Romelli (2022) and updated in this paper captures the highest number of reforms presented in this literature, with 286 and 370 changes in the degree of independence of the central bank, respectively. For example, Acemoglu et al. (2008) build a dummy variable that captures reforms by looking at the Cukierman et al. (1992) index computed in 1989 and its values in 2003. They identify 40 major central bank legislative reforms in a sample of 52 countries over the period 1972-2005. The large number of reforms captured in both Romelli (2022) and this paper shows that CBI indices are rather dynamic over time and highlight the importance of focusing on dynamic indices.

Figure 1 shows the distribution of reforms over time.<sup>8</sup> A large number of reforms occurred during the 1990s, with a peak in 1998 when the ECB became the unique monetary policy authority for euro area countries. A wave of reforms can also be noticed following the 2008 financial crisis, with increases mainly associated with improvements in the degree of independence along the dimension related to the governor and board, while decreases in the index corresponded to reforms regarding the involvement of central banks in banking supervision. Finally, a last wave of reforms mainly focused on improving the degree of central bank independence can be noticed starting from 2016. This idea is confirmed in

<sup>8</sup>Despite the first available legislation is the Organic Law of the Central Bank of Colombia of 1923, the tables and figures presented in the remained of the paper will focus on the period between 1950 and 2023.

Figure 2: Reforms in Central Bank Independence (2017 vs. 2023)



Note: The figure compares the level of central bank independence proxied by the CBIE index in 2017 and 2023.

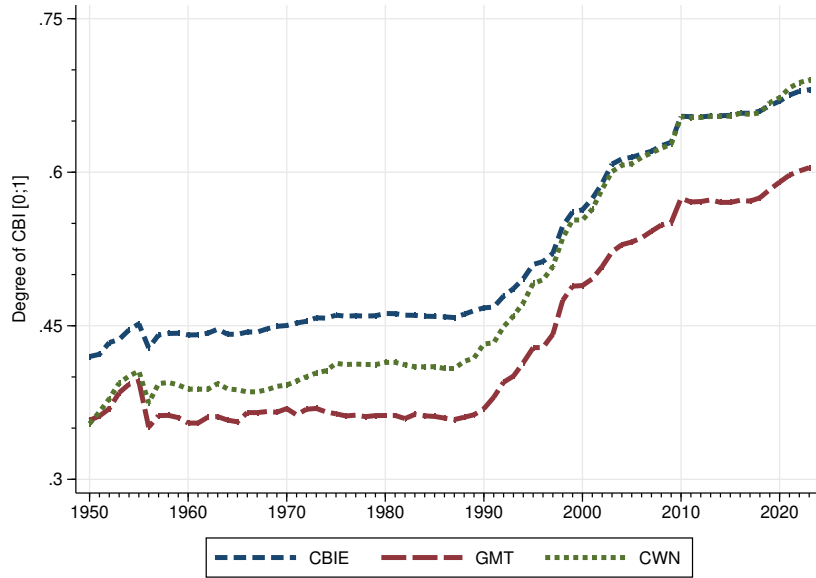
Figure 2, which compares the degree of central bank independence proxied by the CBIE index in 2017 and 2023, i.e since the last available year of the CBIE data in Romelli (2022) and the current update of the index. As most of the countries lying outside the 45-degree line are clustered above it, this provides evidence of a renewed tendency towards improving the degree of central bank independence.

## 4 Trends in central bank independence

Figure 3 shows the level and trends in the indices of central bank independence presented in this paper. As suggested by the number of reforms in CBI presented in Figure 1, it is possible to notice how the level of central bank independence across the CBIE, GMT and CWN indices of central bank independence has remained stable until the late 1980s. After that, the average level of CBI increased at a constant pace until 2010. From the post-Global financial crisis period up until 2015, the average level of CBI remained almost unchanged, but a new wave of reforms seems to have started since 2016. Appendix Figure C.2 shows the interquartile distribution of the CBIE index. This figure highlights the impact of central bank legislative reforms implemented during the 1990s and early 2000s, which led to an increased heterogeneity in central bank independence across countries. However, following this first wave of reforms, it becomes evident that less independent central banks have introduced measures that reduced the differences in the distribution

of the index. In fact, countries within the 10th percentile of the index distribution now exhibit a level of independence more than double its 1950 value, approaching the median level of central bank independence observed among the analyzed countries in 1950.

Figure 3: Evolution of Central Bank Independence (1950-2023)



Note: The figure shows the evolution of the CBIE, GMT and CWN indices of central bank independence between 1950 and 2023.

Table 3 offers an overview of the evolution of the CBIE, GMT and CWN indices of central bank independence between 1950 and 2023. It shows a clear increase in the mean level of CBI in all three measures, which almost doubled between the 1970s and nowadays. Overall, the average value of these indices has risen by over 50 percent from the 1950s to the present day.

Table 3: Summary statistics on the evolution of CBI (1950-2023)

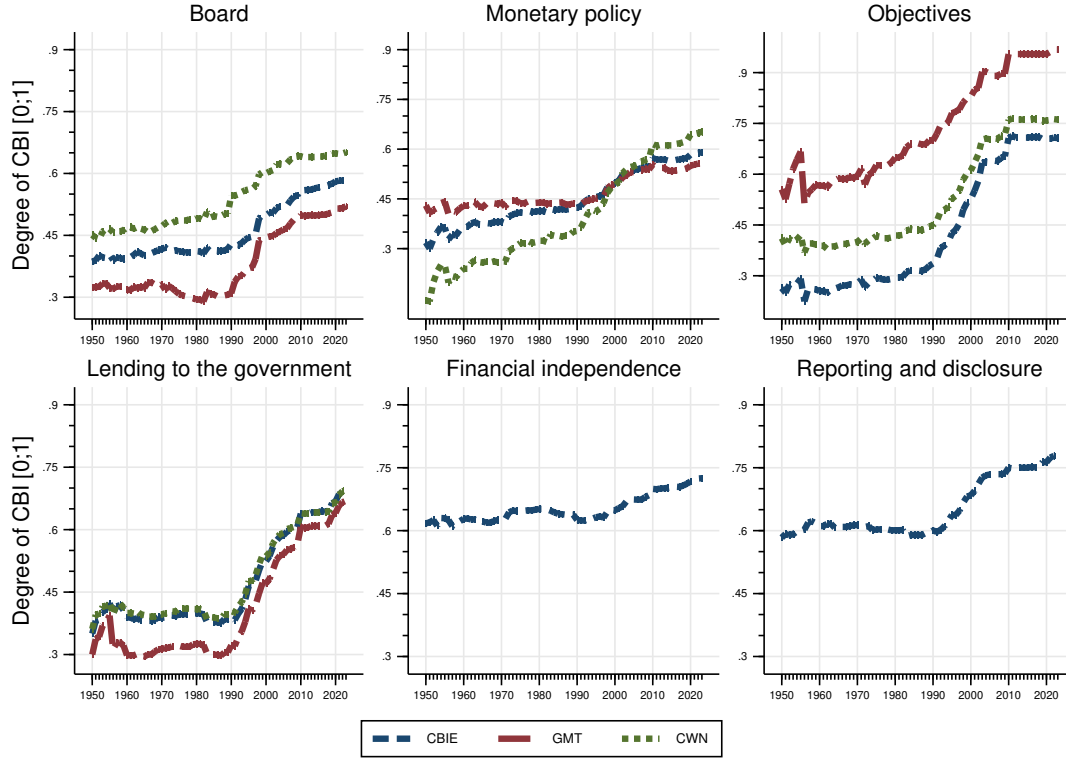
Period	Countries	# of Reforms	# of Reversals	Mean	Min	Max
<b>CBIE</b>						
1950-1959	51	4	1	0.438	0.142	0.691
1960-1969	73	6	9	0.444	0.112	0.691
1970-1979	93	11	13	0.457	0.122	0.691
1980-1989	110	8	10	0.461	0.098	0.729
1990-1999	149	75	18	0.507	0.142	0.929
2000-2009	155	89	13	0.606	0.142	0.929
2010-2017	155	135	29	0.628	0.142	0.929
2018-2023	155	38	7	0.672	0.208	0.912
<b>GMT</b>						
1950-1959	51	2	1	0.368	0.063	0.75
1960-1969	73	2	2	0.361	0.063	0.75
1972-1979	93	6	10	0.365	0.063	0.75
1980-1989	110	7	6	0.361	0.063	0.75
1990-1999	149	57	15	0.425	0.063	1
2000-2009	155	67	9	0.526	0.063	1
2010-2017	155	86	22	0.546	0.063	1
2018-2023	155	28	1	0.592	0.125	1
<b>CWN</b>						
1950-1959	51	3	1	0.388	0.055	0.814
1960-1969	73	5	7	0.388	0.05	0.814
1972-1979	93	10	10	0.407	0.055	0.814
1980-1989	110	9	3	0.412	0.055	0.814
1990-1999	149	69	13	0.486	0.055	0.979
2000-2009	155	67	11	0.6	0.055	0.979
2010-2017	155	93	17	0.625	0.055	0.979
2018-2023	155	31	6	0.677	0.152	0.979

Note: Table provides summary statistics for the CBIE, GMT and CWN indices of central bank independence between 1950 and 2023.

Figure 4 shows the evolution of independence across the six dimensions of the CBIE index. Independence increases, on average, across all dimensions, with the highest increase in the dimension regarding the objectives of monetary policy-making, which more than doubled during the period 1950-2023. This confirms the increasing focus on the goal of price stability across the world over the past five decades. Central banks have also increased significantly their independence in terms of lending to the government. Interestingly, financial independence as well as reporting and disclosure were the two dimensions characterised by the highest degree of independence in the early 1950s and have only marginally increased since then.

Figure 5 shows the evolution of the CBIE index from 1950 until 2023 by clusters economics development, i.e. high-income, upper-middle-income, lower-middle-income, and low-income countries, based on the 2022 World Bank classification. Quite surprisingly, the average level of CBI in low-income countries is almost similar to the one of high-income countries, following the sharp increase in CBI experienced by these countries in 2010, as a

Figure 4: Evolution of CBI by dimensions



Note: The figure shows the evolution of the average degree of independence of the different dimensions of the CBIE index. *Board* relates to governor and central bank board; *Monetary policy*: monetary policy and conflicts resolution. *Objectives*: monetary policy objectives. *Lending to the government*: limitations on lending to the government. *Financial independence*: financial independence. *Reporting and disclosure*: reporting and disclosure.

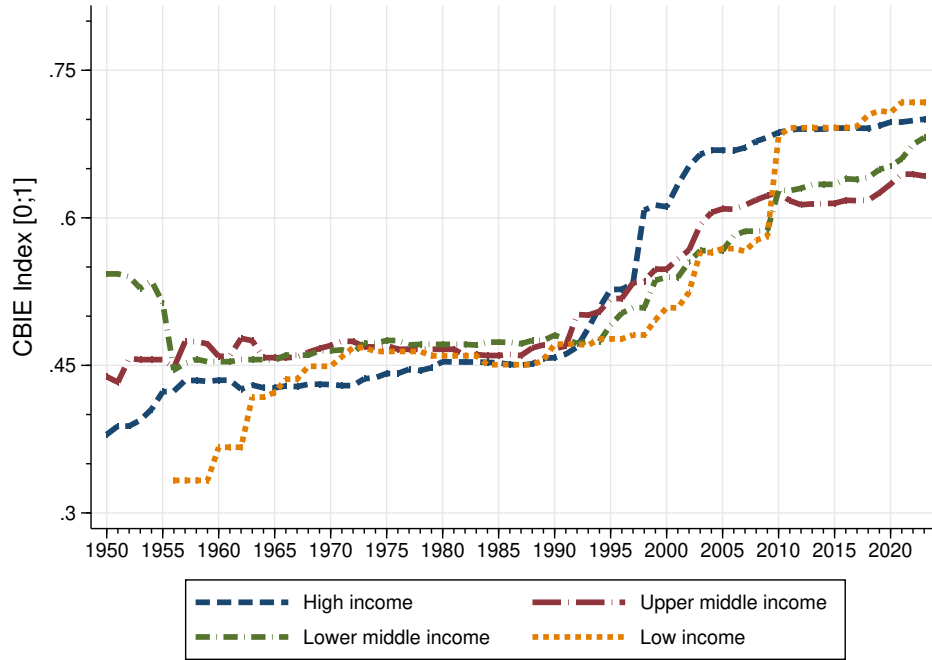
result of a large reform which brought a change in the degree of independence of the Central Bank of West African States from 0.36 to 0.81. Excluding the sample of low-income countries, it appears that CBI tends to be increasing in the level of economic development and has been trending upward for all four groups since the early 1990s.

Finally, Figure 6 allows the comparison of the dynamics of the average CBIE index between countries characterized by fixed versus flexible exchange rate regimes.<sup>9</sup> The results presented in this figure show little difference in the average degree of central bank independence between fixed and floating exchange rate regime countries until the late 1990s. Since 1998, despite the constant increase in the average degree of independence of floating countries, the average CBIE index has improved more among countries adopting fixed exchange rate regimes. These improvements are mainly driven by the introduction of the

<sup>9</sup>This classification is based on the data provided in Ilzetzki et al. (2019). Using the authors' coarse classification of exchange rate regimes, and assuming that their data has not changed since their last release in 2019, we classify as fixed exchange countries all those with a coarse value of 1. All other countries are assigned to the group of floating exchange rates.



Figure 5: Evolution of CBI by level of economic development



Note: The figure shows the evolution of the average degree of independence across central banks grouped based on the 2022 World Bank income classification.

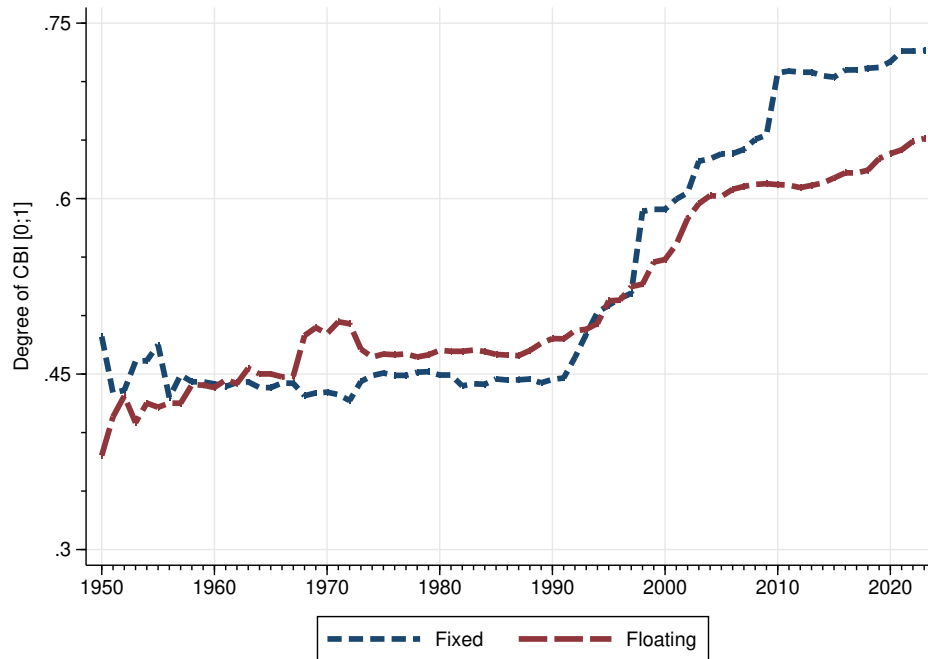
euro and the relatively high independence enjoyed by the European Central Bank. As a matter of fact, euro area countries are classified as adopting a de facto peg.

## 5 Conclusion

This paper provides an overview of the evolution of central bank independence for a large sample of 155 countries from 1923 to 2023. Over this period, I identify a total of 370 reforms in central bank design, that highlight a remarkable global shift towards enhancing the independence of monetary authorities. This shift is particularly notable in the context of recent global challenges that emerged following the 2008 global financial crisis, the COVID-19 pandemic and the recent resurgence of inflation experienced by many high-income countries since mid-2021, which revived the debate on the role and scope of central banks.<sup>10</sup> The findings of this paper contribute to these ongoing discussions, offering a nuanced understanding of how central bank independence has been shaped and reshaped over a century. The increase in the degree of central bank independence, observed across countries with varying levels of economic development and under different exchange rate

<sup>10</sup>See [Dall’Orto Mas et al. \(2020\)](#), [Buckle \(2023\)](#) and [González-Páramo \(2023\)](#) for a discussion on challenges to central banks independence since the 2008 Global financial crisis.

Figure 6: Evolution of CBI by exchange rate regime



Note: The figure shows the evolution of the average degree of independence for fixed versus floating exchange rate regimes, based on the Ilzetzki et al. (2019) clarification.

regimes, signals a broader recognition of the importance of independent monetary policy in maintaining economic stability.

The lessons drawn from this historical analysis underscore the importance of central bank independence not just as an academic concept, but as a crucial component in the formulation of sound economic policies. The amendments brought to the Reserve Bank of New Zealand Act between 2018 and 2023 are only one of the many examples of the evolving mandate of central banks.<sup>11</sup> Similarly, the recent inclusion of “environmental sustainability” as an objective in Hungarian central bank legislation in 2023 highlights the increasing pressure on central banks to align with governmental environmental policies and contribute to the global effort of achieving net-zero emissions. These evolving mandates require central banks to navigate new territories of policy-making while maintaining their core objective of price stability.

Furthermore, the evolving role of central banks is also highlighted by the recent focus on gender diversity, with only a few central banks explicitly mentioning diversity among

<sup>11</sup>The Reserve Bank of New Zealand (Monetary Policy) Amendment Act of 2018 gave the Reserve Bank of New Zealand a dual economic objective of *achieving and maintaining stability in the general level of prices over the medium term and supporting maximum sustainable employment*. The 2023 Reserve Bank of New Zealand (Economic Objective) Amendment Bill of 2023 removed the maximum sustainable employment objective from the objectives of the Reserve Bank, which has now a single objective of achieving and maintaining price stability (See <https://www.justice.govt.nz>).

their objectives. For example, since 2017 the legislation of the National Bank of Rwanda requires that at least 30% of its central bank board members are female. Similarly, the diversity of the board of directors was also introduced in 2023 in the statute of the Central Bank of Sri Lanka.

The comprehensive dataset on central bank independence detailed in this paper could be used for future research aimed at investigating the effects of central bank independence on macroeconomic variables or the link between *de-jure* and *de-facto* indices of independence. Studies similar to those proposed by [Ari et al. \(2023\)](#) on inflation and [Ioannidou et al. \(2022\)](#) on the political influences in governor appointments could benefit from this dataset to further scrutinize the link between *de-jure* independence and real-world policy outcomes.

Such research could particularly elucidate whether increased legal autonomy translates into tangible anti-inflationary success and whether it can effectively withstand the pressures of political appointments, while also accommodating emerging mandates like environmental sustainability and gender diversity.

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# Appendix

## A List of countries

Table A.1: Analyzed countries

Countries, year of first analyzed legislation and level of economic development					
Afghanistan	2003	Low income	Dominica	1983	Upper middle income
Albania	1992	Upper middle income	Dominican Republic	1959	Upper middle income
Algeria	1962	Lower middle income	Ecuador	1957	Upper middle income
Angola	1997	Lower middle income	Egypt	1957	Lower middle income
Anguilla	1987	Low income	Equatorial Guinea	1972	Upper middle income
Antigua and Barbuda	1983	High income	Estonia	1993	High income
Argentina	1935	Upper middle income	Ethiopia	1994	Low income
Australia	1959	High income	Finland	1966	High income
Austria	1955	High income	France	1936	High income
Azerbaijan	1996	Upper middle income	Gabon	1972	Upper middle income
Bahrain	1973	High income	Gambia	1971	Low income
Bangladesh	2003	Lower middle income	Georgia	1995	Upper middle income
Belarus	1990	Upper middle income	Germany	1957	High income
Belgium	1948	High income	Ghana	1975	Lower middle income
Benin	1956	Lower middle income	Greece	1959	High income
Bolivia	1945	Lower middle income	Grenada	1983	Upper middle income
Bosnia and Herzegovina	1997	Upper middle income	Guatemala	1959	Upper middle income
Botswana	1975	Upper middle income	Guinea-Bissau	1997	Low income
Brazil	1964	Upper middle income	Guinea	1994	Low income
Brunei	1984	High income	Haiti	1979	Low income
Bulgaria	1991	Upper middle income	Hungary	1991	High income
Burkina Faso	1956	Low income	Iceland	1966	High income
Burundi	1965	Low income	India	1934	Lower middle income
Cambodia	1954	Lower middle income	Indonesia	1953	Upper middle income
Cameroon	1972	Lower middle income	Iran	1972	Upper middle income
Canada	1954	High income	Iraq	1964	Upper middle income
Central African Republic	1972	Low income	Ireland	1942	High income
Chad	1972	Low income	Italy	1948	High income
Chile	1953	High income	Ivory Coast	1956	Lower middle income
China	1995	Upper middle income	Jamaica	1992	Upper middle income
Colombia	1923	Upper middle income	Japan	1957	High income
Comoros	1987	Lower middle income	Jordan	1971	Upper middle income
Costa Rica	1953	Upper middle income	Kazakhstan	1993	Upper middle income
Croatia	1991	High income	Kenya	1984	Lower middle income
Cuba	1959	Upper middle income	Kuwait	1968	High income
Cyprus	1963	High income	Kyrgyzstan	1992	Lower middle income
Czech Republic	1991	High income	Laos	1995	Lower middle income
Democratic Rep. of the Congo	1993	Low income	Latvia	1992	High income
Denmark	1942	High income	Lebanon	1969	Upper middle income

Note: The table reports information on the list of analysed countries, the first year of availability of the CBIE index and their level of economic development based on the 2022 World Bank income classification.

Table A.1 Continued: Analyzed countries

Countries, year of first analyzed legislation and level of economic development					
Liberia	1974	Low income	Saint Kitts and Nevis	1983	High income
Libya	1996	Upper middle income	Saint Lucia	1983	Upper middle income
Lithuania	1994	High income	St. Vincent and the Grenadines	1983	Upper middle income
Luxembourg	1983	High income	Saudi Arabia	1957	High income
Macao S.A.R	2000	High income	Senegal	1956	Lower middle income
Macedonia	1992	Upper middle income	Seychelles	1986	High income
Malawi	1989	Low income	Sierra Leone	1963	Low income
Malaysia	1982	Upper middle income	Singapore	1991	High income
Maldives	1982	Upper middle income	Slovakia	1992	High income
Mali	1984	Low income	Slovenia	1991	High income
Malta	1994	High income	Somalia	1960	Low income
Mauritania	1956	Lower middle income	South Africa	1956	Upper middle income
Mauritius	1966	High income	South Korea	1950	High income
Mexico	1960	Upper middle income	Spain	1962	High income
Moldova	1992	Lower middle income	Sri Lanka	1953	Lower middle income
Mongolia	1996	Lower middle income	Sweden	1966	High income
Montenegro	2005	Upper middle income	Switzerland	1953	High income
Morocco	1959	Lower middle income	Taiwan	1979	High income
Myanmar	1952	Lower middle income	Thailand	1942	Upper middle income
Namibia	1990	Upper middle income	The Bahamas	1974	High income
Nepal	1955	Lower middle income	Togo	1956	Low income
Netherlands	1948	High income	Trinidad and Tobago	1964	High income
New Zealand	1933	High income	Tunisia	1958	Lower middle income
Niger	1956	Low income	Turkey	1970	Upper middle income
Nigeria	1969	Lower middle income	Turkmenistan	1994	Upper middle income
Norway	1966	High income	Uganda	1966	Low income
Oman	2000	High income	Ukraine	1991	Lower middle income
Pakistan	1972	Lower middle income	United Arab Emirates	1980	High income
Panama	1941	High income	United Kingdom	1946	High income
Paraguay	1952	Upper middle income	United Republic of Tanzania	1966	Lower middle income
Peru	1962	Upper middle income	United States of America	1951	High income
Philippines	1948	Lower middle income	Uruguay	1938	High income
Poland	1997	High income	Uzbekistan	2000	Lower middle income
Portugal	1962	High income	Venezuela	1939	Upper middle income
Qatar	1993	High income	Vietnam	1990	Lower middle income
Republic of Congo	1972	Lower middle income	Yemen	1971	Low income
Romania	1991	High income	Zambia	1971	Lower middle income
Russia	1992	Upper middle income	Zimbabwe	1956	Lower middle income
Rwanda	1997	Low income			

Note: The table reports information on the list of analysed countries, the first year of availability of the CBIE index and their level of economic development based on the 2022 World Bank income classification.

## B Coding rules for the CBIE index

This index provides an indicator of central bank *de jure* independence and disclosure. Source: [Romelli \(2022\)](#).

### I. Governor and central bank board

I.1)	Who appoints the governor?	
	Central bank board / shareholders (if different from the government)	1.00
	A council of the central bank board, executive branch, and legislative branch	0.75
	By legislative branch (congress, King)	0.50
	By executive branch collectively (e.g. council of ministers)	0.25
	By one or more members of executive branch	0.00
I.2)	Term of office of the governor	
	More than 8 years	1.00
	6 to 8 years	0.75
	Equal to 5 years	0.50
	Equal to 4 years	0.25
	Less than 4 years or at the discretion of appointer (no limits or not mentioned)	0.00
I.3)	Is there any reappointment option for the governor?	
	No	1.00
	Restricted to two consecutive terms	0.50
	Yes	0.00
I.4)	Provisions for dismissal of governor	
	No provision for dismissal	1.00
	Only for non-policy reasons (e.g., incapability, or violation of law)	0.83
	At the discretion of central bank board	0.67
	For policy reasons at legislative branch's discretion	0.50
	At legislative branch's discretion	0.33
	For policy reasons at executive branch's discretion	0.17
	At executive branch's discretion	0.00
I.5)	May the governor hold other offices in government?	
	Prohibited by law	1.00
	Not allowed unless authorized by executive branch	0.50
	No prohibition for holding another office	0.00
I.6)	Is there any qualification requirement for the governor?	
	Yes	1.00
	No	0.00
I.7)	Who appoints the rest of the board?	
	Central bank board / shareholders (if different from the government)	1.00
	A council of the central bank board, executive branch, and legislative branch	0.75
	By legislative branch (congress, King)	0.50
	By executive branch collectively (e.g. council of ministers)	0.25
	By one or more members of executive branch	0.00
I.8)	Term of office of the rest of the board	
	More than 8 years	1.00
	6 to 8 years	0.75
	Equal to 5 years	0.50
	Equal to 4 years	0.25
	Less than 4 years or at the discretion of appointer (no limits or not mentioned)	0.00
I.9)	Is there any reappointment option for the rest of the board?	
	No	1.00
	Restricted to two consecutive terms	0.50
	Yes	0.00
I.10)	Provisions for dismissal of the rest of the board	
	No provision for dismissal	1.00
	Only for non-policy reasons (e.g., incapability, or violation of law)	0.83
	At the discretion of central bank board	0.67
	For policy reasons at legislative branch's discretion	0.50
	At legislative branch's discretion	0.33
	For policy reasons at executive branch's discretion	0.17
	At executive branch's discretion	0.00
I.11)	May the rest of the board hold other offices in government?	
	Prohibited by law	1.00
	Not allowed unless authorized by executive branch	0.50
	No prohibition for holding another office	0.00

I.12)	Is there any qualification requirement for the rest of the board?	
	Yes	1.00
	No	0.00
I.13)	Does the legislation require a staggering term of office for the appointment of board members?	
	Yes	1.00
	No	0.00
I.14)	No mandatory participation of government representatives in the board	
	Yes	1.00
	No, but without voting rights	1.00
	No	0.00
<b>II. Monetary policy and conflicts resolution</b>		
II.1)	Who formulates monetary policy?	
	Central bank alone	1.00
	Central bank participates, but has little influence	0.67
	Central bank only advises government	0.30
	Central bank has no say	0.00
II.2)	Is the central bank responsible for setting the policy rates?	
	Yes	1.00
	No	0.00
II.3)	Is there no responsibility of the central bank for overseeing the banking sector?	
	Banking supervision not entrusted to the central bank	1.00
	Banking supervision not entrusted to the central bank alone	0.50
	Banking supervision entrusted to the central bank alone	0.00
II.4)	Central bank given active role in formulation of government's budget and/or debt	
	Approves government budget and/or debt	1.00
	Legally required to provide opinion on technical aspects	0.50
	No involvement at all	0.00
II.5)	Who has final word in resolution of conflicts?	
	The central bank, on issues clearly defined in the law as its objectives	1.00
	Government, on policy issues not clearly defined as the central bank's goals	0.80
	A council of the central bank, executive branch, and legislative branch	0.60
	The legislature, on policy issues	0.40
	The executive branch on policy issues, subject to due process and possible protest by the bank	0.20
	The executive branch has unconditional priority	0.00
<b>III. Objectives</b>		
III.1)	Price stability objective	
	Price stability is the single or primary objective	1.00
	Price stability together with non-conflicting objectives but without priority	0.75
	Price stability plus others goals including financial stability of financial system that may conflict with the former, without priority	0.50
	Price stability together with economic growth/development with no priority	0.25
	Objectives do not include price stability	0.00
<b>IV. Limitations on lending to the government</b>		
IV.1)	Limitations on advances	
	Advances to government prohibited	1.00
	Advances permitted, but with strict limits (e.g., up to 15 percent of government revenue)	0.67
	Advances permitted, and the limits are loose (e.g., over 15 percent of government revenue)	0.33
	No legal limits on lending	0.00
IV.2)	Lending to government	
	Not allowed	1.00
	In the secondary market with restricted limits	0.75
	In the secondary market with lax or without limits	0.50
	In the primary market with limits or approved by central bank board with a qualified majority	0.25
	In the primary market without limits	0.00
IV.3)	Who decides financing conditions to government (maturity, interest, amount)?	
	Central bank defines terms and conditions	1.00
	Specified by the bank charter	0.67
	Agreed between the central bank and executive	0.33
	Decided by the executive branch alone	0.00

IV.4)	Potential borrowers from the central bank	
	Only the government	1.00
	Government plus local governments	0.67
	All of the above plus public enterprises	0.33
	All of the above and to the private sector, also if it is not mentioned otherwise	0.00
IV.5)	Limits on central bank lending defined	
	As an absolute cash amount	1.00
	As a percentage of central bank capital or other liabilities	0.67
	As a percentage of government revenues	0.33
	As a percentage of government expenditure	0.00
IV.6)	Maturity of advances	
	Within 6 months	1.00
	Within 1 year	0.67
	More than 1 year	0.33
	No mention of maturity in the law	0.00
IV.7)	Interest rates on advances	
	At market rates	1.00
	Interest rates not specified in law	0.50
	At below market rates	0.00
IV.8)	Central bank prohibited from buying or selling government securities in the primary market	
	Yes	1.00
	No	0.00

## V. Financial independence

V.1)	Does the statute describe precisely the provisions relating to the payment of the initial capital?	
	Yes	1.00
	No	0.00
V.2)	The Statute quantify precisely the authorized capital of the central bank	
	Yes	1.00
	No	0.00
V.3)	Financial autonomy	
	Government should maintain central capital integrity	1.00
	Government is legally allowed to capitalize the central bank	0.67
	The law does not allow the government to capitalize the central bank	0.33
	The central bank conducts quasi-fiscal operations	0.00
V.4)	Are there legal arrangements allowing for an automatic capital contribution upon the request by the central bank (automatic recapitalization)?	
	Yes	1.00
	No	0.00
V.5)	How are managed, from a legislative point of view, transfers of money from the treasury to the central bank?	
	The decision is based on technical criteria	1.00
	The transfer requires approval by the Treasury	0.50
	The transfer requires an act of the legislature	0.00
V.6)	The central bank has the exclusive right to determine and approve its annual budget	
	Yes	1.00
	Ex-post approval by the government	0.50
	No	0.00
V.7)	The adoption of the annual balance sheet of the central bank belongs exclusively to its decision-making bodies	
	Yes	1.00
	No	0.00
V.8)	The accounts of the central bank are subject to the control of a state agency of auditing	
	No	1.00
	No, but the external audit agency is appointed by the government	0.50
	Yes	0.00
V.9)	Allocation of the net profits of the central bank	
	Prescribed by the statute / central bank charter	1.00
	Left to the discretion of the central bank	0.67
	A kind of negotiation between the government and the central bank	0.33
	Left to the discretion of the government	0.00

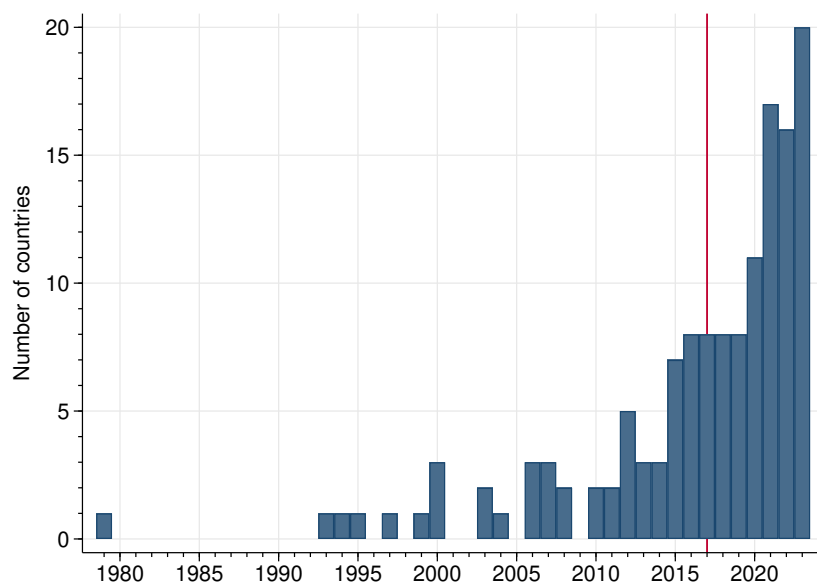
V.10)	How is the allocation of profits to the general reserve fund handled by the central bank?	
	The decision is just on objective criteria established precisely by the statute	1.00
	The decision is left to the discretion of the central bank	0.67
	The decision is made by the central bank in consultation with the government	0.33
	Left to the discretion of the government	0.00
V.11)	Can the state or the shareholders receive partial payments before the end of the fiscal year, based on an estimate for that year?	
	No	1.00
	Yes	0.00
V.12)	Are unrealized profits included in the calculation of distributable profits?	
	No	1.00
	Yes	0.00

## VI. Reporting and disclosure

VI.1)	Central Bank reporting	
	Reports to executive branch and informs at least annually to Congress.	1.00
	Reports to the executive once a year and submits an annual report to Congress	0.75
	Annual report to the executive. Informs to the executive branch whenever fundamental disequilibria emerge, or reports through the media without specific periodicity	0.50
	Issues annual report at specific time	0.25
	Distributes an annual report without establishing particular period of time	0.00
VI.2)	Central bank financial statements	
	Discloses detailed financial statements at least once a year with a certification of an independent auditor	1.00
	Discloses consolidated financial statements at least once a year with seal of the Banking Superintendent or other public sector authority	0.75
	Discloses financial statements at least once a year, certified by an internal	0.50
	Publishes partial financial statements	0.25
	Does not publish financial statements or the law authorizes the central bank to deviate from international accounting standards	0.00

## C Figures and tables

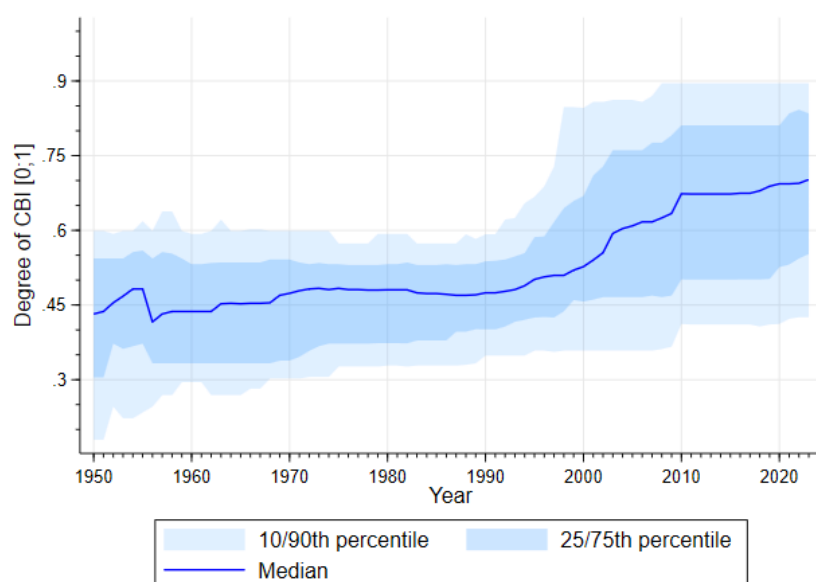
Figure C.1: Central Bank legislation's latest updates



Note: The figure shows the year of the most recent central bank legislation or amendments adopted by the countries in our sample.



Figure C.2: Interquartile distribution of the CBIE index (1950-2023)



Note: The figure shows the interquartile distribution of the CBIE index 1950 and 2023.