Revisiting Central Bank Independence in the World: An Extended Dataset

RESEARCH NOTE

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How has central bank independence (CBI) changed over time and across countries? This paper introduces the most comprehensive dataset on de jure CBI, including country-year observations covering 192 countries between 1970 and 2023. The dataset identifies statutory reforms affecting CBI, their direction, and codes four dimensions of CBI (personnel independence, central bank's objectives, policy formulation, and limits on lending). It includes two CBI indices and a regional diffusion variable. The broader coverage of this dataset has important implications. First, although this dataset coding decisions are generally consistent with previous research, countries included only in this dataset tend to have lower CBI and differ in other dimensions with those previously coded. This suggests that systematically missing data in other data sources may have effects on inferences. Second, extended temporal coverage allows analyzing the evolution of central bank governance for more than a decade since the Global Financial Crisis. Finally, the data show that although there is a global tendency towards more CBI, there is significant variance across and within regions, including numerous reforms reducing CBI in the past two decades. This data contribution is important for research beyond the study of monetary institutions and their effects.

¿De qué manera ha cambiado la independencia de los bancos centrales (IBC) a lo largo del tiempo y de los distintos países? Este artículo presenta el conjunto de datos más completo sobre la IBC de iure e incluye observaciones por país y año que cubren 192 países entre 1970 y 2023. Este conjunto de datos identifica las reformas estatutarias que afectan a la IBC, así como su dirección, y codifica cuatro dimensiones de la IBC: independencia del personal, objetivos del banco central, formulación de políticas y límites a los préstamos. Además, incluye dos índices relativos a la IBC y una variable de difusión regional. La cobertura más amplia que ofrece este conjunto de datos tiene implicaciones importantes. En primer lugar, aunque las decisiones en materia de codificación de este conjunto de datos son generalmente consistentes con investigaciones previas, los países incluidos solo en este conjunto de datos tienden a tener una IBC más baja y difieren con respecto a otras dimensiones con los datos codificados anteriormente. Esto sugiere que la falta sistemática de datos en otras fuentes de datos puede tener efectos sobre las inferencias. En segundo lugar, la cobertura temporal ampliada permite analizar la evolución de la gobernanza de los bancos centrales durante más de una década desde la crisis financiera mundial. Por último, los datos muestran que, si bien existe una tendencia mundial hacia una mayor IBC, existe una variación significativa entre las regiones e incluso dentro de ellas, incluyendo numerosas reformas que han reducido la IBC en las últimas dos décadas. Esta contribución a nivel de datos resulta importante para poder llevar a cabo una investigación más allá del estudio de las instituciones monetarias y sus efectos.

Comment l'indépendance de la banque centrale (IBC) a-t-elle évolué dans le temps et d'un pays à l'autre? Cet article présente l'ensemble de données le plus exhaustif sur l'IBC de jure, y compris des observations par pays et année couvrant plus de 192 pays entre 1970 et 2023. L'ensemble de données identifie des réformes légales affectant l'IBC et son orientation, et encode quatre dimensions d'IBC (l'indépendance du personnel, les objectifs de la banque centrale, la formulation de politiques et les limites de prêt). Il inclut deux indices d'IBC et une variable de diffusion régionale. La couverture plus large de cet ensemble de données s'accompagne d'importantes implications. D'abord, bien que les décisions d'encodage de cet ensemble de données confirment généralement les recherches antérieures, les pays figurant uniquement dans cet ensemble de données ont tendance à présenter une IBC plus faible et comporter des différences à d'autres égards par rapport à ceux encodés précédemment. Aussi des données qui manqueraient systématiquement dans d'autres sources de données auraient-elles une incidence sur les inférences. Ensuite, une couverture temporelle étendue permet d'analyser l'évolution de la gouvernance de la banque centrale pendant plus de dix ans, depuis la crise financière mondiale. Enfin, les données montrent que bien qu'il existe une tendance mondiale de renforcement de l'IBC, des variations importantes subsistent entre et dans les régions, dont de nombreuses réformes réduisant l'IBC ces deux dernières décennies. L'importance de cette contribution de donnée pour la recherche dépasse la seule étude des institutions monétaires et de leurs effets.

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Introduction

In the 1980s, central bank independence (CBI)—that is, the delegation of monetary policy to central bankers to pursue price stability insulated from political pressures was proposed as the key tool to control inflation. This prescription attempted to counter political business cycles and to solve the time-inconsistency problem of monetary commitments—with a dose of faith in the advantages of technocratic decision-making. In the following two decades, CBI was adopted worldwide, encouraged by international financial institutions (Kern, Reinsberg, and Rau-Göhring 2019) and rewarded by financial markets (Bodea and Hicks 2015a, 2018). CBI delivered price stability without apparent costs in terms of employment (Cukierman 1992; Alesina and Summers 1993; Bodea and Hicks 2015b; Garriga and Rodriguez 2020), and soon became a staple of good monetary and economic governance (Maxfield 1997; McNamara 2003; Amtenbrink 2005). Yet, as I explain below, the desirability of CBI has been questioned on different grounds, mainly as a consequence of both the Great Moderation and the Global Financial Crisis. Some countries have responded to new developments increasing CBI, whereas others have reduced their central banks' independence. Lack of up-todate worldwide data on CBI has constrained research on how governments have reacted to these policy and academic debates regarding CBI, or about the potential effects of CBI in different contexts.

This paper addresses this lacuna by introducing new data on CBI, covering 192 countries between 1970 and 2023. The new dataset corrects and expands Garriga (2016). It codes central bank statutes and identifies reforms affecting CBI and their direction for 9,109 country-year observations, and estimates different indices of CBI for 8,546 observations. This represents a 46 percent extension of the coverage of the most comprehensive dataset on de jure CBI available to date (Garriga 2016). On average, this dataset includes fifty four more countries per year than Bodea and Hicks (2015b, updated to 2020²), thirty seven more than Romelli (2022), and twenty two more than Garriga (2016). See Online Appendix 1 for country-year coverage of different datasets.

The increased geographic coverage is important because previously omitted countries tended to be from the developing world and have lower CBI. Due to systematically missing data on countries for whom information is harder to obtain, previous research may have overestimated the level of CBI in the world, which may have biased inferences based on smaller samples. Temporally, the new data cover central bank governance for more than a decade since the Global Financial Crisis, including the COVID-19 and inflation surge years. Importantly, this extended dataset highlights that although there is a global tendency towards more CBI, there is significant variance across and within regions, including numerous reforms that have reduced CBI in the past two decades.

These data contribute to research beyond the study of monetary institutions and their effects. CBI, one of the key reforms in the neoliberal agenda, has been widely used to study international phenomena and to proxy important domestic political dynamics. For example, CBI helps understand global capital markets (Ballard-Rosa, Mosley, and Wellhausen 2022; Zeitz 2022; Hansen 2023; Ba and Winecoff 2024), foreign direct investment (Zhao, Chen, and de Haan 2023), banking regulation (Omori 2024), and remittances (Culver 2022). It has been an useful indicator for environmental studies-i.e., green innovation (Spyromitros 2023) and response to natural disasters (Klomp 2020; Klomp and Sseruyange 2021; Fisera, Horvath, and Melecky 2023)—and also in conflict studies (Garriga 2022; Wang 2023). In comparative politics, it has been used in research on delegation and technocratic policymaking (Pond 2021; Choudhury and Sahu 2022; Moschella and Pinto 2022; Myksvoll, Tatham, and Fimreite 2022; Betz and Pond 2023), regulatory convergence (Goldfajn, Martínez, and Valdés 2021; Emily Jones and Zeitz 2019), economic voting (Kim 2023), populism (Gavin and Manger 2023), neo-corporatism (Etchemendy 2019), and regime stability (Bodea, Garriga, and Higashijima 2019). As a dependent variable, research on the evolution of CBI can also illustrate dynamics about bureaucratic inertia, institutional stability and quality, power sharing, and potential limits for policy intervention. The data have also policy relevance, particularly for the evaluation of central bank governance, and may inform current policy debates.4

In the next section, contextualize the importance of CBI and of data on its global evolution. Next, I describe the data collection process and the dataset. I compare this dataset with similar data collections highlighting the general coding consistency and warning on potential biased results when using geographically or temporally restricted samples. Section 4 uses the new data to describe the state of CBI in 2023, and highlights the evolution of CBI since 2000. The last section discusses potential uses for these data in different research programs.

Contextualizing CBI

Many argue that since the early 1990s, CBI has become "the norm" for central bank governance (Johnson 2016; Erik McNamara 2003; Jones and Matthijs 2019; Moschella 2024). However, CBI as a policy prescription emerged in a context of serious concerns about stabilizing inflation, and reliance on interest rates as the main tool for affecting price stability. "This model facilitated accountability, preserved the legitimacy of a technocratic agency, and safeguarded the much cherished independence that ensures credibility in monetary policy" (Goodhart and Lastra 2024, 7). Two important developments affected this original context: the Great Moderation (mid-1980s to 2007) and the Global Financial Crisis (late 2007 to 2009).

First, after almost two decades of Great Moderation—that is, with inflation under control in most of the developed world, and generally low inflation rates globally—the need to protect CBI to control inflation seemed less urgent. This led to two contrasting proposals: while some wanted to constrain CBI, others suggested to expand the remit of independent central banks. On the one hand, claims to constrain (independent) central bankers' powers were based on normative and economic concerns. Normatively, some questioned the legitimacy of the central bankers' powers and

¹The largest available dataset, Garriga (2016), includes up to 182 countries between 1970 and 2012, coding reforms in 6,764 observations, and estimating CBI scores for 5.853 observations.

²I thank Cristina Bodea and Raymond Hicks for sharing their updated data covering until 2020.

³Examples of countries in this dataset not included—or included for significantly fewer years—in other datasets are Angola, Aruba, Bermuda, Bhutan, El Salvador, Eritrea, Madagascar, Papua New Guinea, Serbia and Montenegro, South Sudan, Syria, Swaziland/Eswatini, and Tuvalu. Online Appendix 1 lists the countries included in the sample and the number of observations per country.

⁴See, for example, the British Parliament's inquiry "The Bank of England: how is independence working?" Accessed March 26, 2024. https://committees.parliament.uk/work/7356/bank-of-england-how-is-independence-working/news/186474/the-bank-of-england-how-is-independence-working-economic-affairs-committee-launches-inquiry/.

demanded mechanism to increase transparency and accountability in these independent agencies (Elgie 1998; Erik Jones and Matthijs 2019; van 't Klooster 2020). Others focused on the negative consequences of a narrow focus on price stability and highlighted economic trade-offs that CBI might impose particularly on income distribution (Aklin and Kern 2021; Aklin, Kern, and Negre 2021; Tomita 2023).

On the other hand, others proposed to exploit independent central banks' potential as institutional focal points to anchor expectations even beyond domestic prices (Wansleben 2018) and to expand their remit. Central banks could serve additional goals, particularly, financial stability, a more active role in growth, employment, and even green finance (Dikau and Volz 2021). This idea was consistent with the positive reaction of markets to independent central banks (Bodea and Hicks 2018; Gavin 2020). However, there was no clear evidence suggesting of CBI as an effective tool to address these additional concerns (Berger and Kißmer 2013).

Second, the 2008 Global Financial Crisis also affected the framework within which central banks were assessed: Seemingly unable to deliver financial stability, central banks relied on unconventional tools to serve objectives beyond the price stability mandate. This raised increased scrutiny over their mandate and independence (de Haan et al. 2018; Erik Jones and Matthijs 2019; Mabbett and Schelkle 2019; McPhilemy and Moschella 2019). Altogether, increasing concerns about inequality while fears about inflation took the back seat, the economic impact of the financial crisis, and central banks' activism and free interpretation of their mandates raised further questioning of the legitimacy of central banks' powers and independence, both in the developed and in the developing world (Wachtel and Blejer 2020). This led academics to stress the need to "rethink the role that central banks play in contemporary political systems" (Fernández-Albertos 2015, 232).

How did governments react to these new demands? Under what conditions did governments alter the autonomy of their central banks? Similarly, given the change in context and expectations, have the economic and political effects attributed to CBI changed in the past two decades? Despite important descriptive accounts (McPhilemy and Moschella 2019), lack of comparable data regarding the design of central banks and their independence, especially in the aftermath of the Global Financial Crisis, makes it hard to empirically address these questions. This paper does not intend to answer these questions but introduces data that will support research on these issues.

Extending the Data on CBI

Coding Process and Descriptive Statistics

This dataset corrects⁶ and expands geographically and temporarily the largest dataset available to date (Garriga 2016), widely used among social scientists. The new dataset includes 2,693 additional observations coding formal attributes of CBI—personnel independence (central bank's CEO variables), the exclusivity or not of the price stability mandate (objectives), independence in policy formulation, and limitations on lending to the government following the

work of Cukierman, Webb, and Neyapti (1992).⁷ These variables are scored from 0 (no independence) to 1 (maximum independence) and aggregate in two overall CBI indices. The unweighted index is the raw average of the four main dimensions, and the weighted index gives more weight to the restrictions to lending than the other three dimensions.⁸ Online Appendix A at the end of this paper lists the variables and their weight in the index.

I replicated Garriga's (2016) procedure to revise and extend the original dataset. Supported by student research assistants, I checked the websites of central banks yearly between 2018 and 2024, and downloaded documents listed as their legal framework. I manually coded or supervised the coding of over 2,400 documents between 2020 and 2024. During the coding process, I replicated Garriga's (2016) "targeted searches" procedure to find earlier reforms: if a law being coded mentioned it was modifying or replacing another law, I used national legislatures' search engines and Google to find those documents by their number, title, and/or date. This procedure allowed me to complete the temporal coverage and brought to light documents previously overlooked. In the case of consolidated versions of the laws, I compared the laws side by side, attributing any change to the date of the last version. If laws, amendments, or decrees that directly refer to central banks did not affect the components of CBI included in the index, they were not coded as reforms of CBI.⁹ As in previous coding efforts, in absence of legislation to code the index components, I relied on other sources to determine whether a central bank was in existence or created in a given year, or if there was a reform that altered CBI—but I did not code the CBI index variables (577 observations).

I coded the four dimensions of the Cukierman, Webb, and Neyapty (CWN) index (Personnel independence, Objectives, Policy formulation, and Limits on lending) and built two indices (CBI unweighted and CBI weighted), following the coding and weighting rules described in Online Appendix A (Cukierman, Webb, and Neyapti 1992). This dataset includes a series of dichotomous variables coded as 1 if a central bank was created (Creation) or was reformed in a way that affected their CBI as defined in the index (Reform), and whether the central bank includes more than one country in a monetary union (Regional). The direction of the reforms (Direction) is coded -1 if the reforms decrease CBI, and 1 if it increases the weighted index. Finally, the dataset includes regional CBI averages (Diffusion), a strong predictor of the level of CBI (Bodea and Hicks 2015a;

⁵Recent research shows how central banks have adapted to these changing environment either by "new" tools or by adjusting their communications (Johnson, Arel-Bundock, and Portniaguine 2019; Bianchi et al. 2023).

⁶Newly retrieved central bank statutes lead to corrections in the original dataset.

⁷I follow Cukierman, Webb, and Neyapti's (1992) (CWN) criteria for coding CBI because their index indicators cover the most significant conceptual dimensions of CBI. To the two "traditional" dimensions of independence over goals and instruments (Debelle and Fischer 1995), CWN adds the legal protections to the tenure of the central bank's governor, and an exhaustive coverage of the limits to the government to finance itself using central bank's funding. Other coding efforts include dimensions that reflect other aspects of central bank governance that exceed the concept of CBI—i.e., central bank transparency (Romelli 2022) or speak to de facto CBI (Adrian, Khan, and Menand 2024).

⁸Although for presentation and comparison purposes this research note relies on the weighted index, researchers may find it useful the unweighted index or some of its components.

 $^{^9\}mathrm{I}$ identified over 1,100 laws reforming different aspects of central banks. Only 441 affect CBI as measured here.

 $^{^{10}\}mathrm{A}$ total of 1,419 observations (15.6 percent of the sample) correspond to countries that are members of regional central banks (e.g., Central Bank of West African States, Eastern Caribbean Central Bank, or European Central Bank). Unless indicated differently, all descriptive statistics refer to the full sample.

¹¹Averages are estimated for Latin America and the Caribbean, Western Europe and North America, Eastern Europe and former Soviet countries, Africa and the Middle East, and Asia and the Pacific. For the estimation of the regional averages, "Asia and the Pacific" excludes Middle East and former Soviet countries.

Table 1. Descriptive statistics^a

Variable	Observations	Mean	Std. Dev.	Min.	Max.
Creation	9,123	0.0080	0.0891	0	1
Reform	9,109	0.0468	0.2112	0	1
Direction	9,108	0.0298	0.2124	-1	1
CBI increase	9,108	0.0377	0.19041	0	1
CBI decrease	9,108	0.0082	0.0904	0	1
Regional	9,123	0.1555	0.3624	0	1
Components					
1. Personnel independence	8,546	0.5408	0.2095	0	0.895
2. Objectives	8,546	0.51775	0.2373	0	1
3. Policy formulation	8,546	0.4034	0.3294	0	1
4. Limits on lending	8,546	0.4872	0.2738	0	1
CBI indices					
CBI unweighted	8,546	0.4872	0.1939	0.006	0.974
CBI weighted	8,546	0.4898	0.2051	0.011	0.979
CBI weighted in other datasets					
Garriga (2016)	5,853	0.4896	0.2036	0.0167	0.979
Bodea & Hicks (2015b), updated	5,283	0.4988	0.1955	0.0128	0.9606
Romelli (2022) ^b	5,820	0.5296	0.2246	0.055	0.979
Diffusion	9,123	0.4820	0.1229	0.178	0.7406

^aOnline Appendix 2 reproduces table 1 excluding observations corresponding to regional central banks.

Garriga and Rodriguez 2020, 2023). Table 1 shows descriptive statistics of the new dataset, and a comparison of the weighted CBI index in this dataset, with the same variable in the three largest available datasets.¹²

This dataset includes data on CBI for between 46 percent and 62 percent more observations than the largest previously available data collections. The extension is not only temporal but also geographic: on average this dataset includes between fourteen and sixty four more countries per year than previous datasets (see figure 1, left-side panel and Online Appendix 1). Geographically, this dataset covers a significant number of developing countries, especially from Africa and the Middle East, and Latin America and the Caribbean (see Online Appendix 3). This larger coverage has important implications because the observations that are omitted in the other datasets are not random: these are generally country-year observations for which information has not been easily accessible—either because governments are less invested in data transparency (Hollyer, Rosendorff, and Vreeland 2011), or because they have fewer resources to digitalize legislation collections (Sol 2013; Alcaide Muñoz, Rodríguez Bolívar, and López Hernández 2017). This is evident when comparing some characteristics of countries included with those that are not included in other datasets, but covered by this paper's data collection (see Online Appendix 4). The omitted observations tend to be more authoritarian countries, have significantly lower levels of capital openness, and significantly higher levels of trade openness measured as total trade over gross domestic product (GDP). In two of the datasets, there are also significant differences in average inflation and GDP per capita between the included and excluded observations.

Figure 1 illustrates the importance of the larger crosssectional and temporal coverage. The left-side panel shows the number of countries per year included in different datasets. The right-side panel plots the yearly world average of the CBI indicator in this dataset, against the yearly average of other datasets. The yearly world average CBI in this paper's dataset is generally lower than the average of the other data collections.¹³ Given the high correlation between this dataset and the other coding efforts (between 0.75 and 0.91, see Online Appendix 5), the lower average in this dataset can be attributed mostly to the new observations included in this sample. A similar pattern is apparent in regional subsamples. When newly coded observations are included, the regional CBI average is generally lower—that is, the newly coded observations cover central banks that tended to have less autonomy than their regional peers (see Online Appendices 3 and 4).

This dataset codes 426 instances of reforms that affected CBI. Of these, 345 increased and 74 reduced the weighted CBI index. There are six reforms that did not result in a change in the overall CBI index—increases in some variables offset decreases in other variables. ¹⁴ In these cases, the variable *Direction* equals 0. Although the 1990s witnessed the largest number of reforms (142 reforms), most of them took place in newly independent and democratizing countries. ¹⁵ Globally, the rate of reforms has dropped significantly in the 2000s, but this is not representative of regional dynamics.

^bI excluded observations that code central banks before the date of the law that created them. For example, Czech Republic 1991, Kyrgyzstan 1992, Liberia 1974–1997, and Equatorial Guinea 1972–1984 (the country joined the Bank of Central African States in 1985). I have not found legislation to code Brunei Darussalam (1984–2010), included in Romelli's dataset. I have included those twenty-seven observations when describing his data.

¹²A new dataset (Adrian, Khan, and Menand 2024) that weights CBI legal measures with the estimates of an expert survey covers 147 countries in four updates (2010, 2015, 2020/2021, and 2023) is not available for analysis yet. However, differences in measurement and significantly shorter temporal coverage would make it less suitable for the comparisons presented in this paper.

¹³Bodea and Hicks's data yearly average is the lowest of all series in the 1980s (1983–1990, and 1992–1993) and between 2010 and 2018. The first instance seems driven by the selection of Latin American cases, and the second, by the exclusion of the members of the European Central Bank from their sample (see Online Appendix 3).

¹⁴In the case of Georgia (law of 1992), I was unable to determine the direction of the reform due to missing data on the previous level of independence.

 $^{^{15}\}mathrm{The}$ number (sample percentage) of reforms affecting CBI per decade is 67 (5.44 percent) in the 1970s, 43 (2.89 percent) in the 1980s, 142 (7.9 percent) in the 1990s, 90 (4.76 percent) in the 2000s, and 63 (3.3 percent) in the 2010s, and 21 (2.75 percent) between 2020 and 2023.

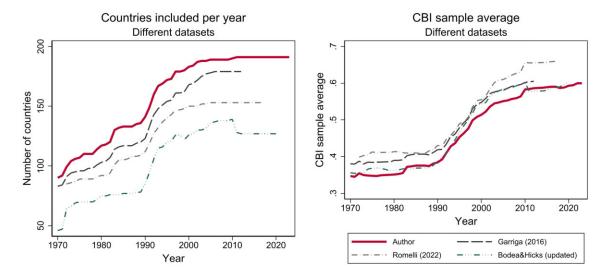


Figure 1. Dataset coverage and CBI average. Comparison with other datasets.

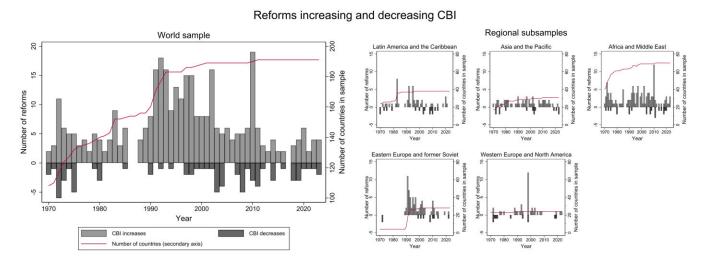


Figure 2. Count of reforms affecting CBI, and countries included in samples. Worldwide and regional subsamples. *Notes*: The sum of reforms increasing CBI is shown as positive numbers, and the sum of reforms decreasing CBI, as negative numbers. The solid line (secondary axis) indicates the number of countries coded in the world or regional sample each year. Online Appendix 6 replicates this figure omitting observations from countries that joined regional central banks.

As figure 2 (right side panel) illustrates, except for Western Europe and North America, reforms have taken place in most of the developing world, and in both directions—that is, increasing and decreasing independence.

Validity Checks

This section has two purposes. First, to show that the coding of CBI in this dataset is consistent with other data collections—that is, to check the face validity of my coding. Second, to illustrate that smaller samples covered by other datasets may have a substantive impact on inference. To do so, I show the correlation between CBI and both inflation (table 2) and unemployment (table 3) using this paper's and other authors' data (columns 1, 2, 4, and 6, respectively) using each dataset's full sample. Then, I re-estimate the same models using this paper's data in samples defined by the coverage of other datasets (Columns 3, 5, and 7). These analyses are the basis for two comparisons: between the estimates from different sources (this paper's and other authors' datasets) in the same samples, and between esti-

mates using this paper's data in different subsamples defined by the coverage of other datasets to illustrate the effect of the newly coded observations. Importantly, these analyses do not intend to test the effects of CBI—to do so, theory-driven, fully specified models should be estimated—but to show coding consistency and to illustrate the potential effect of the narrower coverage of other datasets.

CODING CONSISTENCY

The coding of CBI in this paper generally aligns with other coders' decisions. As mentioned above, the correlation between this dataset and others is very high (0.91 with CWN original data and Garriga 2016, 0.88 with Bodea and Hicks, and 0.75 with Romelli, see Online Appendix 5). Most of the inconsistencies between datasets seem to originate from reforms affecting CBI coded in this paper but not identified in other collections, from the year in which some reforms were coded—I coded the year in which the law was passed—and from some instances in which coding of some variables diverges.

Table 2. Association between CBI and inflation.

Sample	Author	Garriga	Garriga (2016)		Bodea and Hicks (2015b), updated		Romelli (2022)	
CBI data source	Author (1)	Garriga (2)	Author (3)	Bodea-Hicks (4)	Author (5)	Romelli (6)	Author (7)	
CBI _{t-1}	-0.127**		-0.119**		-0.109**		-0.144**	
	(0.021)		(0.022)		(0.020)		(0.026)	
CBI _{t-1} (other)		-0.120**		-0.111**		-0.094**		
		(0.021)		(0.021)		(0.022)		
Observations	7,726	5,646	5,646	5,154	5,154	5,454	5,454	
R^2 overall	0.530	0.662	0.662	0.682	0.682	0.480	0.481	
Countries	186	178	178	143	143	151	151	
Years	1971-2022	1971–2013	1971–2013	1971–2021	1971-2021	1973–2018	1973–2018	

Notes: Different datasets and samples. Dependent variable: Inflation rate (logged). Coefficients after panel OLS regressions. Constant and lagged dependent variable omitted. Standard errors in parentheses. * p < 0.05, ** p < 0.01.

Table 3. Association between CBI and unemployment.

Sample	Author	Garriga	a (2016)	Bodea and Hicks (2015b), updated		Romelli (2022)	
CBI data source	Author (1)	Garriga (2)	Author (3)	Bodea-Hicks (4)	Author (5)	Romelli (6)	Author (7)
CBI _{t-1}	-0.488**		0.102		-0.161		-0.207*
	(0.105)		(0.096)		(0.088)		(0.083)
CBI t-1 (other)		0.022		-0.169*		-0.196**	
		(0.093)		(0.090)		(0.072)	
Observations	6,033	4,231	4,230	4,387	4,373	4,412	4,320
R^2 overall	0.958	0.953	0.953	0.956	0.956	0.961	0.961
Countries	183	173	173	143	143	148	148
Years	1971-2022	1971-2013	1971-2013	1971-2021	1971-2021	1973-2018	1973-2018

Notes: Different datasets and samples. Dependent variable: Unemployment rate. Coefficients after panel OLS regressions. Constant and lagged dependent variable omitted. Standard errors in parentheses. * p < 0.05, ** p < 0.01.

Consistent with a broad literature suggesting a negative association between CBI and inflation (Cukierman, Webb, and Neyapti 1992; Bodea and Hicks 2015b; Garriga and Rodriguez 2020), all coefficients associated with CBI in table 2 are negative and statistically significant. Pairwise comparisons of coefficients obtained in the same samples—between columns (2) and (3), (4) and (5), and (6) and (7)—show that this paper's measure correlates with inflation in the same direction—and with a similar magnitude—than other measures discussed here. 16 17

THE EFFECT OF BROADER COVERAGE: MITIGATING SAMPLE SELECTION BIAS

Both the correlation between datasets and previous analyses suggest consistency in the coding process. However, the analyses in tables 2 and 3 also illustrate an important implication of the extended dataset. This dataset includes between 2,693 and 3,263 more country-year observations than the other CBI datasets examined here (table 1). These additional observations are not just produced by updating the

complete data series until 2023. The new data also cover previously excluded countries and earlier years of countries included in other datasets (see Online Appendix 1). These new observations that seem to generally have lower levels of CBI. Beyond these descriptive differences, table 3 illustrates that smaller samples covered by other datasets may have substantive impact on inference arising from sample selection bias

The shaded row in table 3 shows the association between this paper's CBI measure and unemployment in four different samples (the full sample, and the subsamples defined by observations included in the other datasets). In the full sample, using this paper's data, the correlation is negative and statistically significant (-0.49). The same association is negative in Column (7), but the point estimates are less than half the size than in the full sample (-0.21). However, the CBI coefficient does not achieve conventional levels of statistical significance in the two other subsamples: Columns (3) and (5). This illustrates how sample selection bias may give rise to inferential problems. ¹⁸

These analyses are not intended to posit a causal relation between CBI and these dependent variables. However, they highlight the value of a broader coverage and suggest that sample selection bias may have an impact on inference for some outcomes, which may require thinking about scope

¹⁶I thank the reviewers for suggesting this straightforward analysis. Online Appendix 7 shows these relationships hold if the regressions omit lagged dependent variable, and if they include fixed effects.

¹⁷Table 3 shows a similar pattern for the correlation between CBI and unemployment. The coefficients obtained with my data and other data when estimated on the same, smaller samples—that is, comparing columns (2) and (3), (4) and (5), and (6) and (7)—are not significantly different from each other, providing additional evidence of coding consistency.

¹⁸Reproducing this exercise in table 2 also reveals differences in the magnitude of the coefficients across subsamples for the association between CBI and inflation

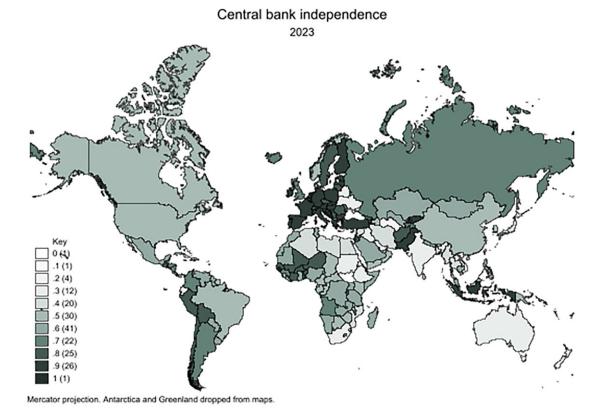


Figure 3. CBI in the world (2023).

conditions in cases where results are sensitive to changes in sample size.

Trends in CBI

Since the end of 1990s, most central banks in the world can be classified as *de jure* independent, and the CBI world average remained between 0.58 and 0.6 since 2010 (see figure 1, right-side panel). Although this may suggest global convergence towards more independent central banks and stability in central bank governance, *there is significant variance across countries, both in the overall level of CBI, and the dimensions of CBI* that are stronger. Furthermore, countries have continued reforming their central bank governance, both increasing and decreasing their central banks' autonomy in different dimensions. Below, I briefly describe some interesting patterns the data exhibit.

CBI at the End of 2023: Higher Independence, but Significant Cross-Country Variance

Regarding overall levels of independence, figure 3 shows significant cross-sectional variance across countries and within regions. Large economies such as Japan, India, or Australia did not have de jure "independent" central banks by the end of 2023. Except for Europe, there is important regional variance.

More Independent Central Banks, but Heterogeneous Institutional
Choices

As mentioned, higher levels of CBI have resulted from heterogeneous institutional choices. Acknowledging that global and regional averages still mask the trajectory of individual countries, a closer look at the four main components of CBI suggests differences in the institutional characteristics of independent central banks.

Whereas in the 1990s governments increased the autonomy of the central banks in all four dimensions measured in this dataset (personnel independence, policy formulation independence, focus on price stability, and limits on lending), reforms in the 2000s do not seem to have increased the protections of the central bank's governors. As figure 4 illustrates, personnel independence has not been increased globally or regionally—in fact, on average, personnel independence has decreased in Latin America and the Caribbean. In contrast, CBI has been generally strengthened in the other three dimensions, especially in the aftermath of the Global Financial Crisis, although with marked regional differences (see figure 4, right side panel).

Ongoing Process of Delegation and De-Delegation

Interestingly, figures 3 and 4 are the result of a series of reforms both increasing and decreasing CBI in the previous two decades. Since 2000, there were 174 reforms affecting CBI. 24 percent of them (42 observations) restricted CBI weighted index, but many reforms that increased the overall CBI score also restricted CBI in at least one of its dimensions. Figure 5 shows the net changes in CBI between 2000 and 2023, illustrating significant restrictions in independence in countries such as Belarus, Ecuador, Turkmenistan, and Venezuela, and important increases in CBI in Croatia, Lithuania, Morocco, Pakistan, and Serbia. 19

¹⁹Notice that these differences may be the result of more than one reform, and not necessarily all in the same direction.

The four dimensions of CBI

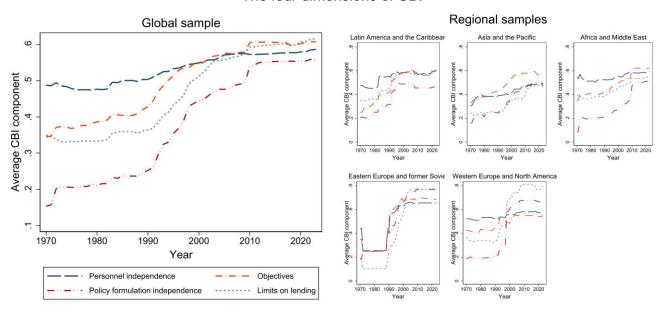


Figure 4. Components of CBI. Average by year, global and regional samples.

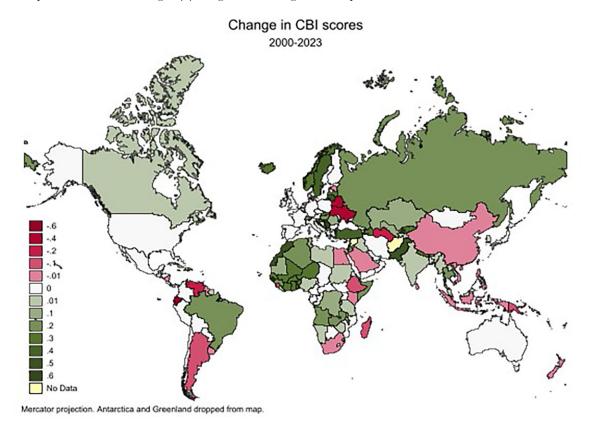


Figure 5. Changes in CBI in the world between 2000 and 2023.

Online Appendix 8 reproduces this figure for changes between 2008 and 2023. A comparison of both figures shows that although many countries currently have higher levels of CBI than in 2000, some of them have decreased their independence since 2008–for example, Macedonia.

These reforms in the span of the first 23 years of the century, both increasing and decreasing CBI in different country.

tries, suggest that the status of central banks is not the mere result of diffusion processes and bureaucratic inertia. CBI is still a product of contested politics and institutional adaptation (Bodea and Garriga 2023; Kern and Seddon 2024). This new dataset will enable further research on the dynamics of central bank governance, monetary policy choices, and delegation.

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Final Remarks

This article introduces the largest dataset coding CBI in 192 countries between 1970 and 2023. The new data expands previous data collection coverage by at least 46 percent, including a significant number of developing countries. New observations that were excluded in other datasets seem to differ from those that were included in important dimensions, including regime type, integration in trade and capital flows, and levels of CBI. Descriptive analyses show that the increased geographic and temporal coverage may have important consequences for our understanding of the evolution of CBI, and our inferences using previous data collections. In particular, the new data present a more nuanced picture in terms of the trajectory of central bank governance across countries, point to potential challenges to inference resulting from sample selection bias, and suggest heterogeneity in the general movement towards greater independence. In particular, descriptive data suggest an ongoing process re-defining the extent and nature of central banks' autonomy both during the Great Moderation and in the aftermath of the Global Financial Crisis. These facts suggest interesting avenues for future research.

These new data will help to answer questions regarding central bank governance and monetary policy, such as under what circumstances central bank autonomy was affected, especially in the past two decades; to what extent governments are using central bank reforms for different purposes or following different motivations. More importantly, it will allow us to explore the effect of these reforms on a range of economic and political outcomes, from capital movements (Ballard-Rosa, Mosley, and Wellhausen 2022; Culver 2022; Zeitz 2022; Zhao, Chen, and de Haan 2023) to regulation (Betz and Pond 2023; Jones and Zeitz 2019; Pond 2021; Moschella and Pinto 2022; Omori 2024), from environmental (Klomp 2020; Spyromitros 2023) to conflict studies (Garriga 2022; Wang 2023).

Beyond its usefulness for understanding phenomena in international and comparative political economy, this larger dataset allows extending the temporal and geographic coverage of empirical studies across disciplines that use on CBI as a proxy for institutional quality, signaling behavior, policy diffusion, and even liberalization. Importantly, comparative data, especially since 2000, can inform policy decisions in a world in which inflation has renewed its importance as a challenge for governments in both the developed and developing world.

Supplementary Information

Supplementary information is available in the *International Studies Quarterly* data archive.

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Appendix A. CBI index: Components, variables included, and their weights (Cukierman, Webb, and Neyapti 1992)

Components (weight in the index)	Variables (weight in the component)	Score	Descriptors
Personnel independence (0.20)	1. Term of office of CEO (0.25)	1	Equal or more than 8 years
		0.75	6 years or more but less than 8 years
		0.50	Equal to 5 years
		0.25	Equal to 4 years
		0	Less than 4 years
	2. Who appoints the CEO (0.25)	1	The Central Bank Board
	• •	0.75	Council composed by executive and legislative branch and Central Bank Board
		0.50	By legislative branch
		0.25	By executive branch
		0	By one or two members of executive branch
	3. Provisions for dismissal of CEO (0.25)	1	No provision
		0.83	Only for non-policy reasons (e.g., incapability, or violation of law)
		0.67	At a discretion of Central Bank Board
		0.50	For policy reasons at legislative branch's discretion
		0.33	At legislative branch's discretion
		0.17	For policy reasons at executive branch's discretion
		0	At executive branch's discretion
	4. CEO allowed to hold another office in government (0.25)	1	Prohibited by law
		0.5	Not allowed unless authorized by executive branch
		0	No prohibition for holding another office
Central bank objectives (0.15)	5. Central Bank objectives (1)	1	Price stability is the only or major goal, and in case of conflict with government, the Central Bank has final authority
		0.8	Price stability is the only goal
		0.6	Price stability along with other objectives that do not seem to conflict with the former
		0.4	Price stability along with other objectives of potentially conflicting goals (e.g., full employment)
		0.2	Central Bank charter does not contain any objective
		0	Some goals appear in the charter, but price stability is no one of them
Policy formulation independence (0.15)	6. Who formulates monetary policy (0.25)	1	Central Bank has the legal authority
		0.67	Central Bank participates together with government
		0.33	Central Bank in an advisory capacity
	7. Government directives and resolution of conflicts (0.50)	0	Government alone formulates monetary policy Central Bank given final authority over issues defined in the law as objectives
	resolution of commets (0.30)	0.8	Government has final authority over issues not clearly defined as Central Bank goals
		0.6	Final decision up to a council whose members are from the Central Bank, executive branch, and legislative branch
		0.4	Legislative branch has final authority
		0.2	Executive branch has final authority, but subject to due process and possible protest by Central Bank
		0	Executive branch has unconditional authority over policy
	8. Central Bank given active role in formulation of government's	1	Yes
	budget (0.25)	0	No.
		0	No

Continued

Components (weight in the	Variables (weight in the						
index)	component)	Score	Descriptors				
Limits on central bank lending to the government (0.50)	9. Limitations on advances (0.30)	1	Advances to government prohibited				
(6.66)		0.67	Permitted but subject to limits in terms of absolute cash amounts or relative limits (government revenues)				
		0.33	Permitted subject to relatively accommodative limits (more than 15 percent of government revenues)				
		0	No legal limitations on advances. Subject to negotiations with government				
	10. Limitations on securitized lending (0.20)		The same as in 9				
	11. Who decides control of terms of lending to government (0.20)	1	Central bank controls terms and conditions				
		0.67	Terms of lending specified in law, or Central Bank given legal authority to set conditions				
		0.33	Law leaves decision to negotiations between the Central Bank and government				
		0	Executive branch alone decides and imposes to the Central Bank				
	12. Beneficiaries of Central Bank lending (0.10)	1	Only central government				
		0.67	Central and state governments, as well as further political subdivisions				
		0.33	Public enterprises can also borrow				
		0	Central Bank can lend to all of the above and to the private sector				
	13. Type of limits when they exist (0.05)	1	As an absolute cash amount				
		0.67	As a percentage of Central Bank capital or other liabilities				
		0.33	As a percentage of government revenues				
		0	As a percentage of government expenditure				
	14. Maturity of loans (0.05)	1	Limited to a maximum of 6 months				
		0.67	Limited to a maximum of 1 year				
		0.33	Limited to a maximum of more than one year				
		0	No legal upper bounds				
	15. Restrictions on interest rates (0.05)	1	Must be at market rate				
		0.75	On loans to government cannot be lower than a certain floor				
		0.50	Interest rate on Central Bank loans cannot exceed a certain ceiling				
		0.25	No explicit legal provisions regarding interest rate in Central Bank loans				
		0	No interest rate charge on government's borrowing from Central Bank				
	16. Prohibition on Central Bank lending in primary market to Government (0.05)	1	Prohibition from buying government securities in primary market				
		0	No prohibition				