Revisiting Central Bank Independence in the World: An Extended Dataset

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Abstract

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.

Keywords: Central bank independence; central banks; data; delegation; Global Financial Crisis; Great Moderation; reforms.

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1. 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 (Alesina and Summers 1993; Bodea and Hicks 2015b; Cukierman 1992; Garriga and Rodriguez 2020), and soon became a staple of good monetary and economic governance (Amtenbrink 2005; Maxfield 1997; McNamara 2003). 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. Insufficient updated worldwide data on CBI has limited 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 data 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.[1] This represents a 46% extension of the coverage of the most comprehensive dataset on de jure CBI available to the date (Garriga 2016). On average, this dataset includes 54 more countries per year than Bodea and Hicks (2015, updated to 2020[2]), 37 more than Romelli (2022), and 22 more than Garriga (2016).[3] See online appendix 1 for country-year coverage of different datasets.

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[1] The 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.

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

[3] Examples 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

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 over-estimated the level of CBI in the world, which may have biased inferences based on these data. 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, the extended dataset highlights 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.

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 understanding global capital markets (Ba and Winecoff 2024; Ballard-Rosa, Mosley, and Wellhausen 2022; Hansen 2023; Zeitz 2022), foreign direct investment (Zhao, Chen, and de Haan 2023), banking regulation (Omori 2023), and remittances (Culver 2022). It has been an useful indicator for environmental studies – i.e., green innovation (Spyromitros 2023) and response to natural disasters (Fisera, Horvath, and Melecky 2023; Klomp 2020; Klomp and Sseruyange 2020) – and also in conflict studies (Garriga 2022; Wang 2023). In comparative politics, it has been used in research on delegation and technocratic policymaking (Betz and Pond 2023; Choudhury and Sahu 2022; Moschella and Pinto 2022; Myksvoll, Tatham, and Fimreite 2022; Pond 2021), regulatory convergence (Goldfajn, Martínez, and Valdés 2021; 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]

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.

[4] See, for example, the British Parliament's inquiry "The Bank of England: how is independence working?" 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/.

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 restricted samples. Section 4 uses the new data to describe the state of CBI in 2023, and focuses on the evolution of CBI since 2000. The last section discusses potential uses for these data in different research programs.

2. Contextualizing CBI

Many argue that since the early 1990s, CBI has become "the norm" for central bank governance (Johnson 2016; Jones and Matthijs 2019; McNamara 2003; Moschella 2024). However, CBI as 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 2023, 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: to constrain CBI and 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 demanded mechanism to increase transparency and accountability in these independent agencies (Elgie 1998; Jones and Matthijs 2019). 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 2020; 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 central bank *independence* 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 (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?[5] Similarly, given the change in context and expectations, have the economic and political effects attributed to central bank independence 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.

[5] Recent research shows how central banks have adapted to these changing environment either of "new" tools, or adjusting their communications (Bianchi, Gómez-Cram, Kind, and Kung 2023; Johnson, Arel-Bundock, and Portniaguine 2019).

3. Extending the data on CBI

3.1. Coding process and descriptive statistics

This dataset corrects[6] 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] 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

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

[7] I follow Cukierman, Webb, and Neyapti's (1992) (CWN) criteria for coding CBI because their index's 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 add 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 2023) or speak to de facto CBI (Adrian, Khan, and Menand 2024).

[8] Although 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.

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 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 appendix A. 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*).[10] 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*),[11] a strong predictor of the level of CBI (Bodea and Hicks 2015a; 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]

[9] I identified over 1,100 laws reforming different aspect of central banks. Only 441 affect CBI as measured here.

[10] 1,419 observations (15.6% 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.

[11] Averages 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.

[12] A new dataset (Adrian, Khan, and Menand 2024) that weights CBI legal measures with the estimates of an experts 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.

Table 1. Descriptive statistics[13]

Variable	Observations	Mean	Std. Dev.	Min	Max
Creation	9,123	.0080	.0891	0	1
Reform	9,109	.0468	.2112	0	1
Direction	9,108	.0298	.2124	-1	1
CBI increase	9,108	.0377	.19041	0	1
CBI decrease	9,108	.0082	.0904	0	1
Regional	9,123	.1555	.3624	0	1
Components					
1. Personnel independence	8,546	.5408	.2095	0	.895
2. Objectives	8,546	.51775	.2373	0	1
3. Policy formulation	8,546	.4034	.3294	0	1
4. Limits on lending	8,546	.4872	.2738	0	1
CBI indices					
CBI unweighted	8,546	.4872	.1939	.006	.974
CBI weighted	8,546	.4898	.2051	.011	.979
CBI weighted in other datasets					
Garriga (2016)	5,853	.4896	.2036	.0167	.979
Bodea & Hicks (updated)	5,283	.4988	.1955	.0128	.9606
Romelli (2022)[14]	5,820	.5296	.2246	.055	.979
Diffusion	9,110	.4819	.1230	.178	.7589

This dataset includes data on CBI for between 46% and 62% more observations than the largest previously available data collections. The extension is not only temporal, but also geographical: on average this dataset includes between 14 and 64 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 transparency (Hollyer, Rosendorff, and Vreeland 2011), or because they have fewer

[13] Online appendix 2 reproduces Table 1 excluding observations corresponding to regional central banks.

[14] I 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 27 observations when describing his data.

resources to digitalize legislation collections (Alcaide Muñoz, Rodríguez Bolívar, and López Hernández 2017; Sol 2013). 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 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. Dataset coverage and CBI average. Comparison with other datasets

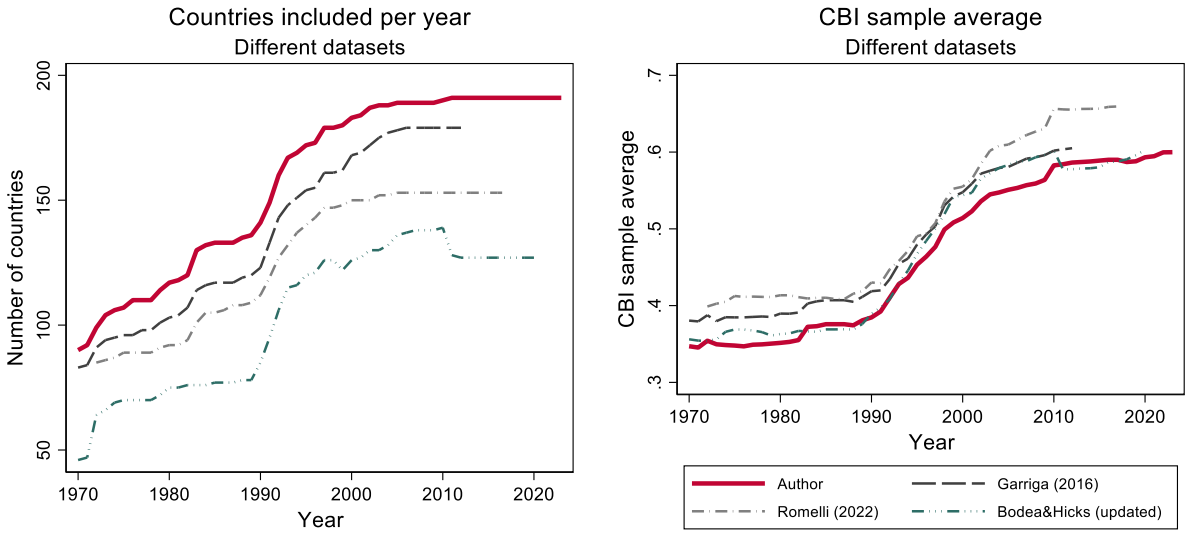


Figure 1 illustrates the importance of the larger cross-sectional and temporal coverage. The left-side panel shows the number of countries per year included in different datasets. The right-side panel plots the yearly world average of the CBI indicator in this dataset, against the yearly average of other datasets. The yearly world average CBI in this paper's dataset is generally lower than the average of the other data collections.[15] Given the high correlation between this dataset and the other coding

[15] Bodea and Hicks's data yearly average is the lowest of all series in the 1980s (1983-1990, and 1992-1993) and between 2010-2018. The first seems driven by the selection of Latin American cases, the second, by the exclusion of the members of the European Central Bank from the sample (see online appendix 3).

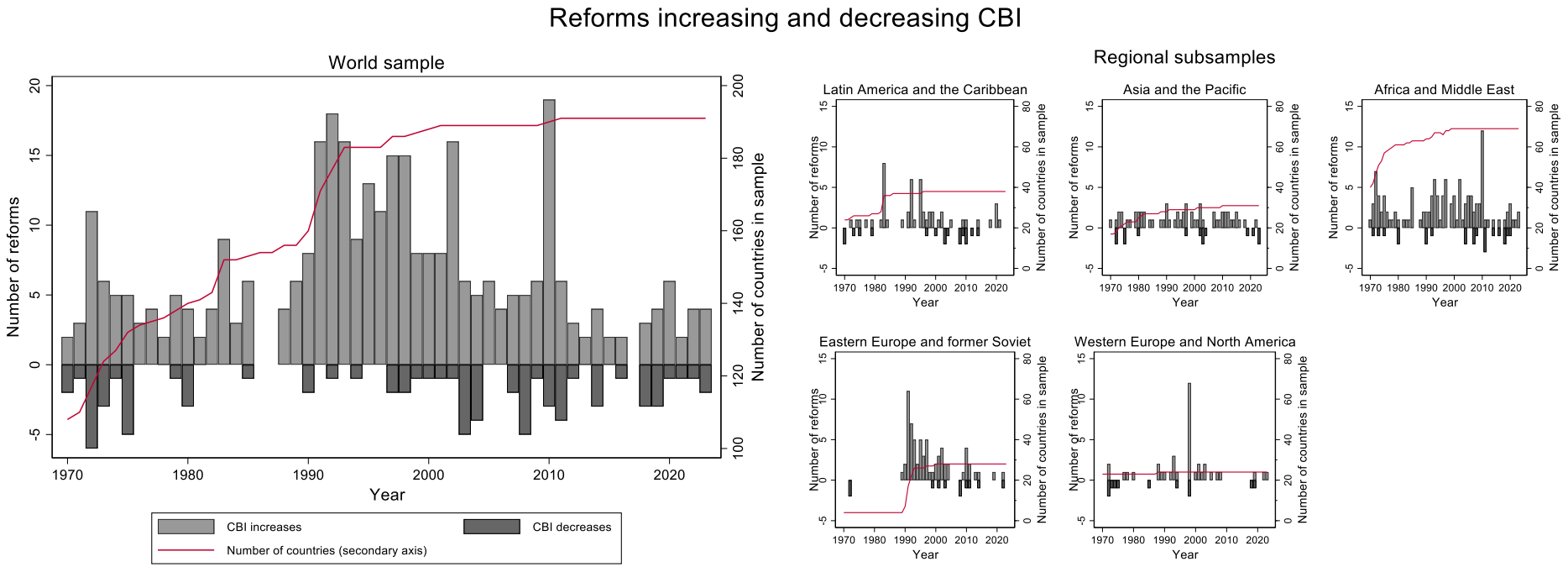
efforts (between 0.75 and 0.91, see online appendix 5), the lower average in this dataset can be attributed mostly to the new observations included in this sample. A similar pattern is apparent in regional subsamples. When newly coded observations are included, the regional CBI average is generally lower – 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.[16] In these cases, the variable *Direction* equals zero. Although the 1990s witnessed the largest number of reforms (142 reforms), most of them took place in newly independent and democratizing countries.[17] Globally, the rate of reforms has dropped significantly in the 2000s, but this is not representative of regional dynamics. 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.

[16] In 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.

[17] The number (sample percentage) of reforms affecting CBI per decade is 67 (5.44%) in the 1970s, 43 (2.89%) in the 1980s, 142 (7.9%) in the 1990s, 90 (4.76%) in the 2000s, and 63 (3.3%) in the 2010s, and 21 (2.75%) between 2020 and 2023.

Figure 2. Count of reforms affecting CBI, and countries included in samples. Worldwide and regional subsamples.[18]



Note: The sum of reforms increasing CBI are 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.

[18] Online appendix 6 replicates this figure omitting observations from countries that joined regional central banks.

3.2. 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 datasets) in the same samples, and between estimates using this paper's data in different subsamples defined by each dataset coverage 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 look at coding consistency and to illustrate the potential effect of the narrower coverage of other datasets.

3.2.1. 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 in reforms affecting CBI coded in this paper but not identified in other collections, in the year in which some reforms were coded – I coded the year in which the law was passed – and some instances in which coding of some variables diverges.

Consistent with a broad literature suggesting a negative association between CBI and inflation (Bodea and Hicks 2015b; Cukierman, Webb, and Neyapti 1992; 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.[19] [20]

Table 2. Association between CBI and inflation. Different datasets and samples

Sample	Author	Garriga (2016)		Bodea-Hicks (updated)		Romelli (2022)	
CBI data source	*Author*	*Garriga*	*Author*	*Bodea-Hicks*	*Author*	*Romelli*	*Author*
	(1)	(2)	(3)	(4)	(5)	(6)	(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: 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.

3.2.2. 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

[19] I thank 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.

[20] Table 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.

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.

Table 3. Association between CBI and unemployment. Different datasets and samples

Sample	Author	Garriga (2016)		Bodea-Hicks (updated)		Romelli (2022)	
CBI data source	*Author*	*Garriga*	*Author*	*Bodea-Hicks*	*Author*	*Romelli*	*Author*
	(1)	(2)	(3)	(4)	(5)	(6)	(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: 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 .

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 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 is 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.[21]

These analyses are not intended to posit a causal relation between CBI and these independent variables. However, they highlight the value of a broader coverage and suggest that sample selection

[21] Reproducing this exercise in Table 2 also reveals differences in the magnitude of the coefficients across subsamples for the association between CBI and inflation.

bias may have an impact on inference for some outcomes, and may require thinking about scope conditions in cases where results are sensitive to changes in sample size.

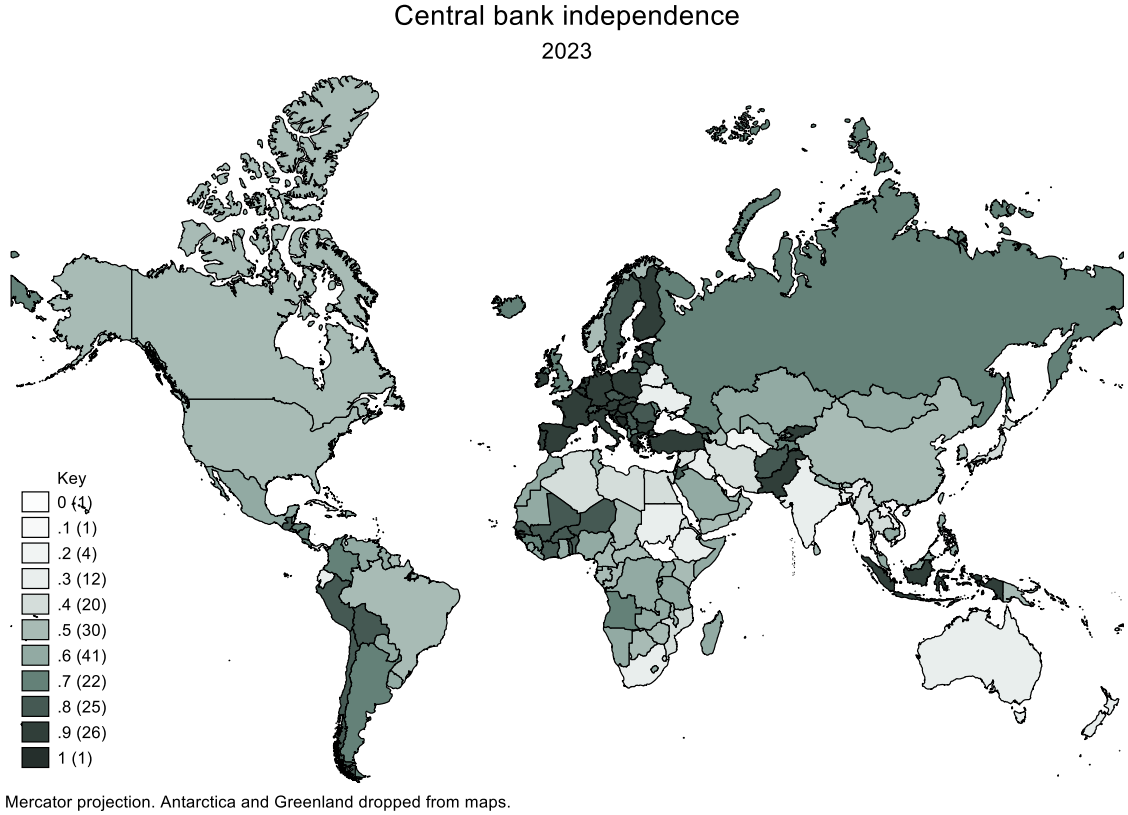
4. Trends in CBI

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.

4.1. Central bank independence 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.

Figure 3. Central bank independence in the world (2023)

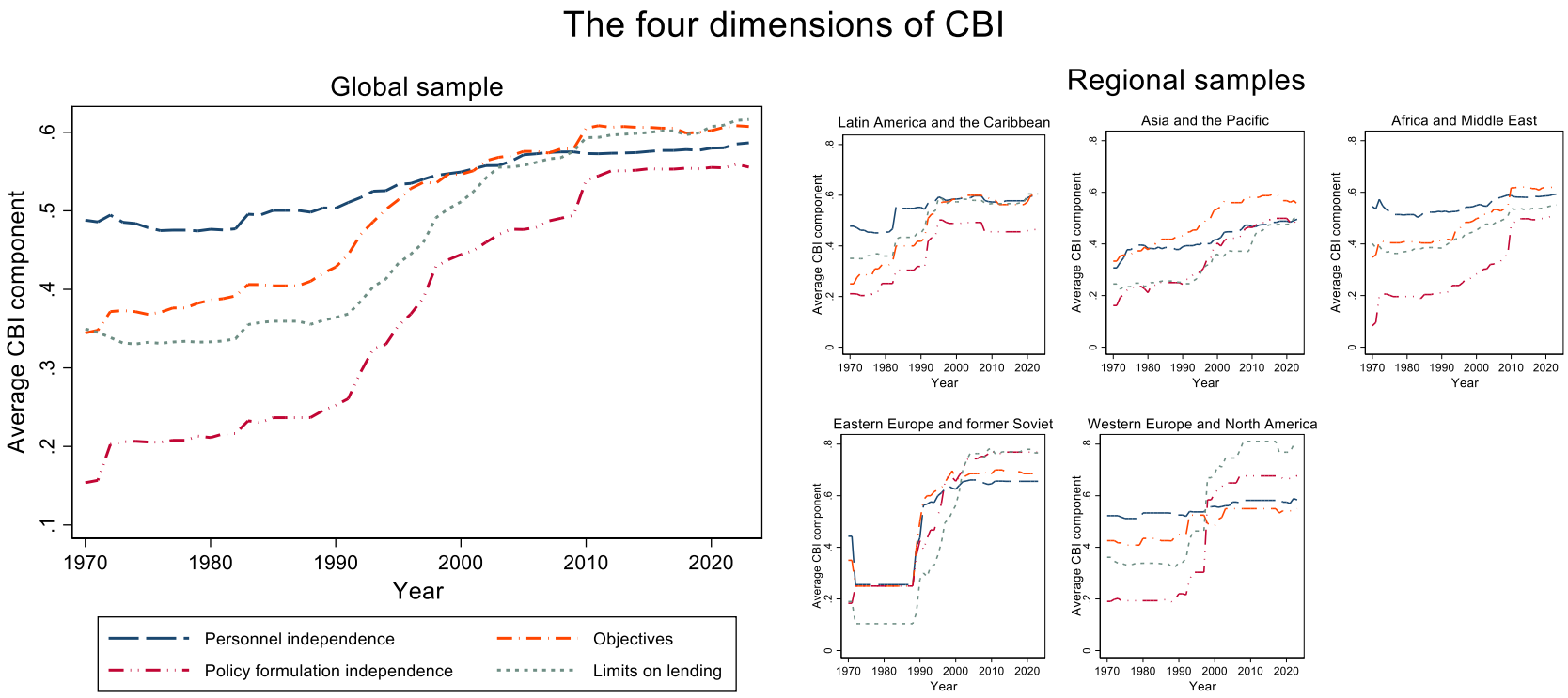


Note: The map represents the weighted CBI index, rounded to the first decimal point.

4.2. 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.

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



Note: The lines represent the sample yearly average of each of the CBI index components.

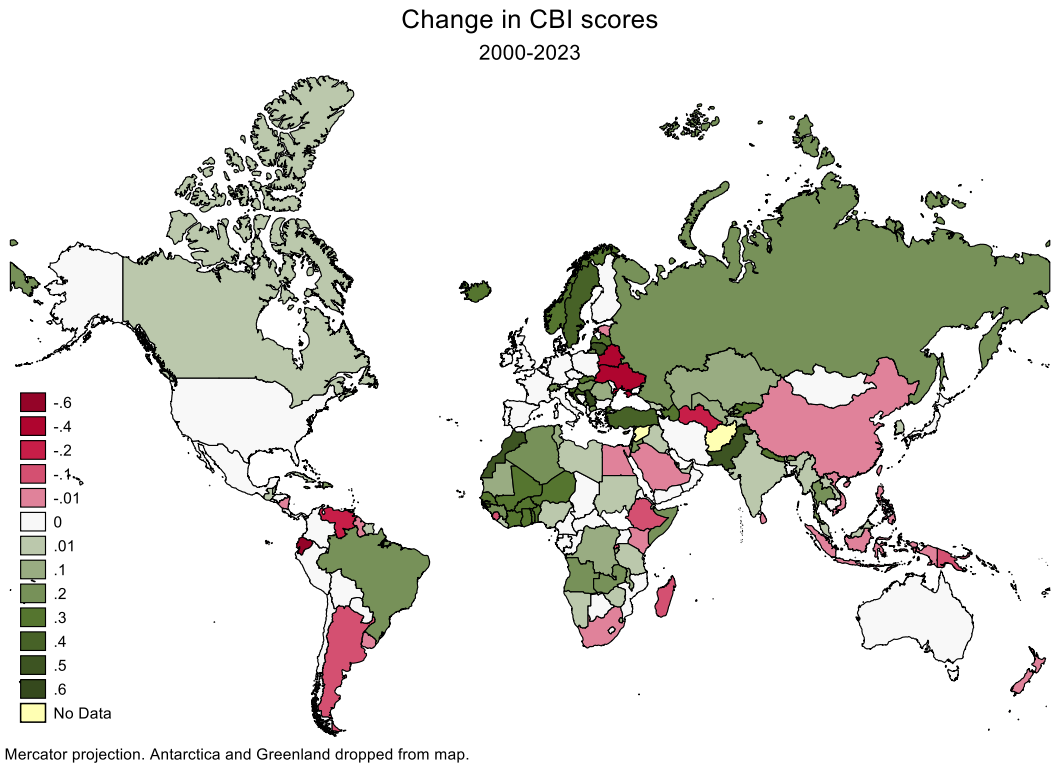
Whereas in the 1990s governments increased the autonomy of the central banks in all four dimensions measured in this dataset (personnel independence, policy formulation independence, focus on price stability and limits on lending), reforms in the 2000s do not seem to have increased the protections of the central bank's governors. As Figure 5 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 dimension, especially in the aftermath of the Global Financial Crisis, although with marked regional differences (see Figure 4, right side panel).

4.3. 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% 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.[22] 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.

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

Figure 5. Changes in central bank independence in the world between 2000 and 2023



Note: The map represents the difference in the weighted CBI index between 2000 and 2023. These differences might be the result of more than one reform. Marginal changes (between zero and |0.01|) indicated with the lightest shades.

These reforms in the span of the first 23 years of the century, both increasing and decreasing CBI in different countries, suggest that the status of central banks is not the mere result of diffusion processes and bureaucratic inertia. Central bank independence 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 of the dynamics of central bank governance, monetary policy choices, and delegation.

5. 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%, 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 question 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 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; Moschella and Pinto 2022; Omori 2023; Pond 2021), 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.

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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 not 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
		0	Government alone formulates monetary policy
		1	Central Bank given final authority over issues defined in the law as objectives
		0.8	Government has final authority over issues not clearly defined as Central Bank goals

Components (weight in the index)	**Variables** (weight in the component)	**Score**	**Descriptors**
	7. Government directives and resolution of conflicts (0.50)	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 budget (0.25)	1	Yes
		0	No
Limits on central bank lending to the government (0.50)	9. Limitations on advances (0.30)	1	Advances to government prohibited
		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

Components (weight in the index)	**Variables** (weight in the component)	**Score**	**Descriptors**
	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

Revisiting Central Bank Independence in the World:

An Extended Dataset

Online appendix

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Appendix 1. Number of observations coded per country. Different datasets.

Country	Author	Garriga 2016	Bodea & Hicks	Romelli 2022
1. Afghanistan	**21**	10		15
2. Albania	**33**	22	29	26
3. Algeria	**54**	10	49	46
4. Angola	**48**		24	21
5. Anguilla	**41**			31
6. Antigua & Barbuda	**41**	30		35
7. Argentina	**54**	43	51	46
8. Armenia	**31**	20	28	
9. Aruba	**33**			
10. Australia	**54**	43	51	46
11. Austria	**54**	43	41	46
12. Azerbaijan	**32**	21	29	22
13. Bahamas	**51**	40		44
14. Bahrain	**51**	7	15	45
15. Bangladesh	**52**	41	49	15
16. Barbados	**52**	41	49	
17. Belarus	**34**	23	29	28
18. Belgium	**54**	43	41	46
19. Belize	**42**	31	21	
20. Benin	**54**	43		46
21. Bermuda	**54**			
22. Bhutan	**42**	31		
23. Bolivia	**54**	43	51	46
24. Bosnia-Herzegovina	**27**	16	24	21
25. Botswana	**49**	38	46	43
26. Brazil	**54**	43	51	46
27. Brunei Darussalam	**14**		11	46
28. Bulgaria	**33**	22	30	27
29. Burkina Faso	**54**	43		46
30. Burundi	**31**	20	28	46
31. Cambodia	**28**	17	25	46
32. Cameroon	**52**	41		46
33. Canada	**54**	43	51	46
34. Cape Verde	**22**	11	19	

Country	Author	Garriga 2016	Bodea & Hicks	Romelli 2022
35. Cayman	**28**			
36. Central African Republic	**52**	41		46
37. Chad	**52**	41		46
38. Chile	**54**	43	51	46
39. China	**54**	43	26	23
40. Colombia	**54**	43	51	46
41. Comoros	**45**	34		31
42. Congo, DR/Zaire	**53**	43		25
43. Congo, Republic of	**52**	41		46
44. Costa Rica	**54**	43	51	46
45. Croatia	**32**	21	29	27
46. Cuba	**27**	16	24	46
47. Cyprus	**22**	11	9	46
48. Czech Republic	**32**	21	29	26
49. Denmark	**54**	43	51	46
50. Djibouti	**32**	13	16	
51. Dominica	**41**	30	31	35
52. Dominican Republic	**54**	23		46
53. Ecuador	**32**	21		46
54. Egypt	**54**	43	49	46
55. El Salvador	**45**	22	30	
56. Equatorial Guinea	**39**	28		34
57. Eritrea	**31**			
58. Estonia	**31**	20	19	25
59. Ethiopia	**54**	43	49	24
60. Fiji	**41**	40	36	
61. Finland	**54**	43	29	46
62. France	**54**	43	41	46
63. Gabon	**52**	41		46
64. Gambia	**19**	8	16	46
65. Georgia	**29**	18	26	23
66. Germany	**54**	43	29	46
67. Ghana	**54**	43	49	43
68. Greece	**54**	43	41	46

Country	Author	Garriga 2016	Bodea & Hicks	Romelli 2022
69. Grenada	**41**	30		35
70. Guatemala	**54**	43	31	46
71. Guinea	**30**	19	27	24
72. Guinea-Bissau	**27**	16		
73. Guyana	**29**	18	31	
74. Haiti	**45**	34		39
75. Honduras	**54**	43	51	
76. Hungary	**54**	43	30	27
77. Iceland	**54**	43	49	46
78. India	**54**	43	51	46
79. Indonesia	**54**	43	51	46
80. Iran	**54**	43	49	46
81. Iraq	**48**	9		46
82. Ireland	**54**	43	41	46
83. Israel	**54**	43	51	
84. Italy	**54**	43	41	46
85. Ivory Coast	**54**	43		46
86. Jamaica	**54**	36	28	26
87. Japan	**54**	43	51	46
88. Jordan	**53**	42	29	46
89. Kazakhstan	**31**	20	28	25
90. Kenya	**54**	43	51	34
91. Korea, Republic of	**54**	43	51	46
92. Kuwait	**54**	36	14	46
93. Kyrgyzstan	**31**	20	28	25
94. Laos	**29**	18	26	23
95. Latvia	**32**	21	29	
96. Lebanon	**54**	43	49	26
97. Lesotho	**24**	13	21	46
98. Liberia	**25**	14	47	19
99. Libya	**31**	20		22
100. Lithuania	**32**	21	30	24
101. Luxembourg	**54**	43	12	35
102. Macedonia	**30**	19	26	26
103. Madagascar	**51**	19	48	

Country	Author	Garriga 2016	Bodea & Hicks	Romelli 2022
104. Malawi	**35**	24	31	29
105. Malaysia	**54**	43	51	36
106. Maldives	**43**	32		36
107. Mali	**40**	29		34
108. Malta	**54**	43		24
109. Mauritania	**54**	43	48	46
110. Mauritius	**54**	9	49	46
111. Mexico	**54**	43	51	46
112. Moldova	**32**	21	30	26
113. Mongolia	**33**	22	30	22
114. Montenegro	**24**	13	16	13
115. Montserrat	**41**			
116. Morocco	**54**	43	49	46
117. Mozambique	**32**	21	29	
118. Myanmar (Burma)	**34**	23		46
119. Namibia	**34**	16	31	28
120. Nepal	**54**	43	19	46
121. Netherlands	**54**	43	41	46
122. New Zealand	**54**	43	51	46
123. Nicaragua	**54**	43	51	
124. Niger	**54**	43		46
125. Nigeria	**54**	43	49	46
126. Norway	**54**	43	51	46
127. Oman	**50**	39	47	18
128. Pakistan	**54**	43	49	46
129. Palestine	**27**			
130. Panama	**54**	43	29	46
131. Papua New Guinea	**51**	13	21	
132. Paraguay	**54**	43	31	46
133. Peru	**54**	43	51	46
134. Philippines	**54**	43	51	46
135. Poland	**54**	43	30	21
136. Portugal	**54**	43	29	46
137. Qatar	**51**	40	28	25
138. Romania	**54**	43	30	27

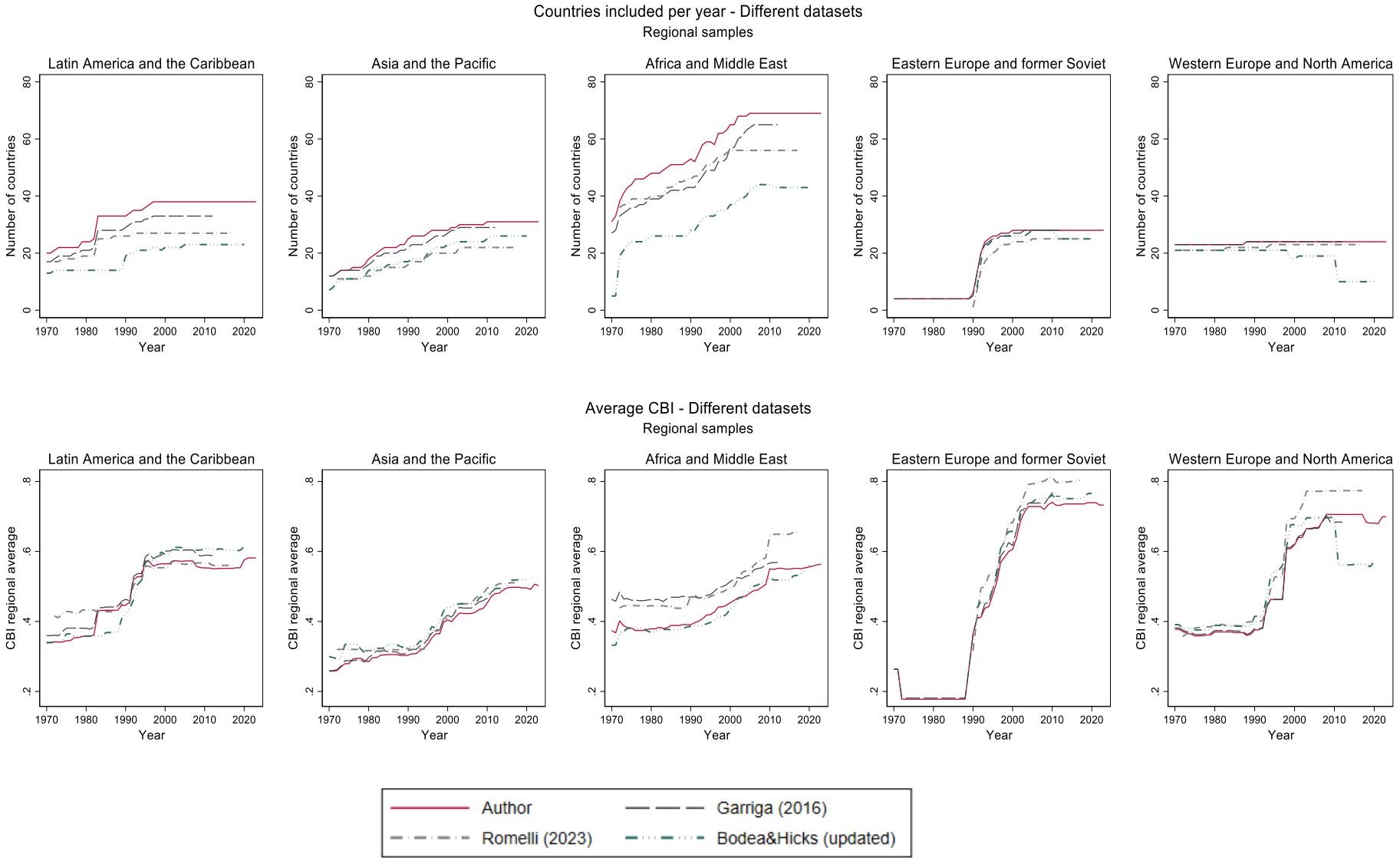
Country	Author	Garriga 2016	Bodea & Hicks	Romelli 2022
139. Russian Federation	**34**	22	28	26
140. Rwanda	**27**	16	24	21
141. Saint Lucia	**41**	30		35
142. Samoa	**40**	29	41	
143. San Marino	**36**	25		
144. Sao Tome and Principe	**32**	21		
145. Saudi Arabia	**54**	43		46
146. Senegal	**54**	43		46
147. Serbia/Serbia-Montenegro/Yugoslavia	**54**	33	17	
148. Seychelles	**41**	30	17	32
149. Sierra Leone	**54**	13	49	46
150. Singapore	**54**	43	50	27
151. Slovakia	**32**	21	19	26
152. Slovenia	**33**	22	20	27
153. Solomon Islands	**48**	31	39	
154. Somalia	**54**	43		46
155. South Africa	**54**	43	51	46
156. Spain	**54**	43	41	46
157. Sri Lanka	**54**	43	47	46
158. St. Kitts and Nevis	**41**	30		35
159. St. Vincent and the Grenadines	**41**	30		35
160. Sudan	**54**	43		
161. Sudan, South	**13**			
162. Suriname	**54**	43	16	
163. Swaziland/Eswatini	**50**		42	
164. Sweden	**54**	43	51	46
165. Switzerland	**54**	43	51	46
166. Syria	**22**	11		
167. Taiwan	**45**	34	42	39
168. Tajikistan	**33**	22	28	
169. Tanzania	**54**	43	49	46
170. Thailand	**54**	43	51	46
171. Timor-Leste	**23**	12	10	
172. Togo	**54**	43		46
173. Tonga	**36**	25	33	
174. Trinidad and Tobago	**54**	43	31	46
175. Tunisia	**54**	43	49	46
176. Turkey	**54**	43	51	46
177. Turkmenistan	**33**	22	29	24
178. Tuvalu	**44**			
179. Uganda	**54**	43	49	46
180. Ukraine	**33**	22	30	27
181. United Arab Emirates	**44**	33	41	38
182. United Kingdom	**54**	43	51	46
183. United States of America	**54**	43	51	46
184. Uruguay	**54**	43	51	46
185. Uzbekistan	**33**	22	29	18
186. Vanuatu	**44**	33	41	
187. Venezuela	**54**	43	51	46
188. Vietnam	**34**	16	24	28
189. Yemen	**24**	13	21	27
190. Yemen, North	**20**			18[1]
191. Zambia	**54**	43	49	46
192. Zimbabwe	**54**	43	51	46
Total	**8546**	5853	5278	5832

[1] Romelli extends the data for Yemen (1990-1999) to Yemen North (1971-1989). There is a 1971 law for the Arab Republic of Yemen.

Appendix 2. Descriptive statistics excluding regional central banks' observations.

Variable	Observations	Mean	Std. Dev.	Min	Max
Creation	7,704	.0086	.0922	0	1
Reform	7,690	.0499	.2178	0	1
Direction	7,689	.0303	.2194	-1	1
CBI increase	7,689	.0395	.1949	0	1
CBI decrease	7,689	.0095	.0970	0	1
Regional	7,704	0	0	0	0
Components					
1. Personnel independence	7,127	.4973	.1966	0	.895
2. Objectives	7,127	.5056	.2410	0	1
3. Policy formulation	7,127	.3666	.3094	0	1
4. Limits on lending	7,127	.4565	.2657	0	1
CBI indices					
CBI unweighted	7,127	.4564	.1869	.006	.974
CBI weighted	7,127	.4584	.1981	.011	.979
CBI weighted in other datasets					
Garriga (2016)	4,932	.4494	.1879	.0167	.979
Bodea & Hicks (2015)	5,123	.4904	.1906	.0128	.9606
Romelli (2022)	4,687	.5129	.2148	.055	.979
Diffusion	7,691	.4715	.1221	.178	.75896

Appendix 3. Dataset comparison by regions. Number of countries and CBI average, per year



Note: The panels labelled "Asia and the Pacific" exclude Middle Eastern and former Soviet countries.

Appendix 4. Comparison between included and excluded observations in previous datasets. Subsample average of selected indicators.

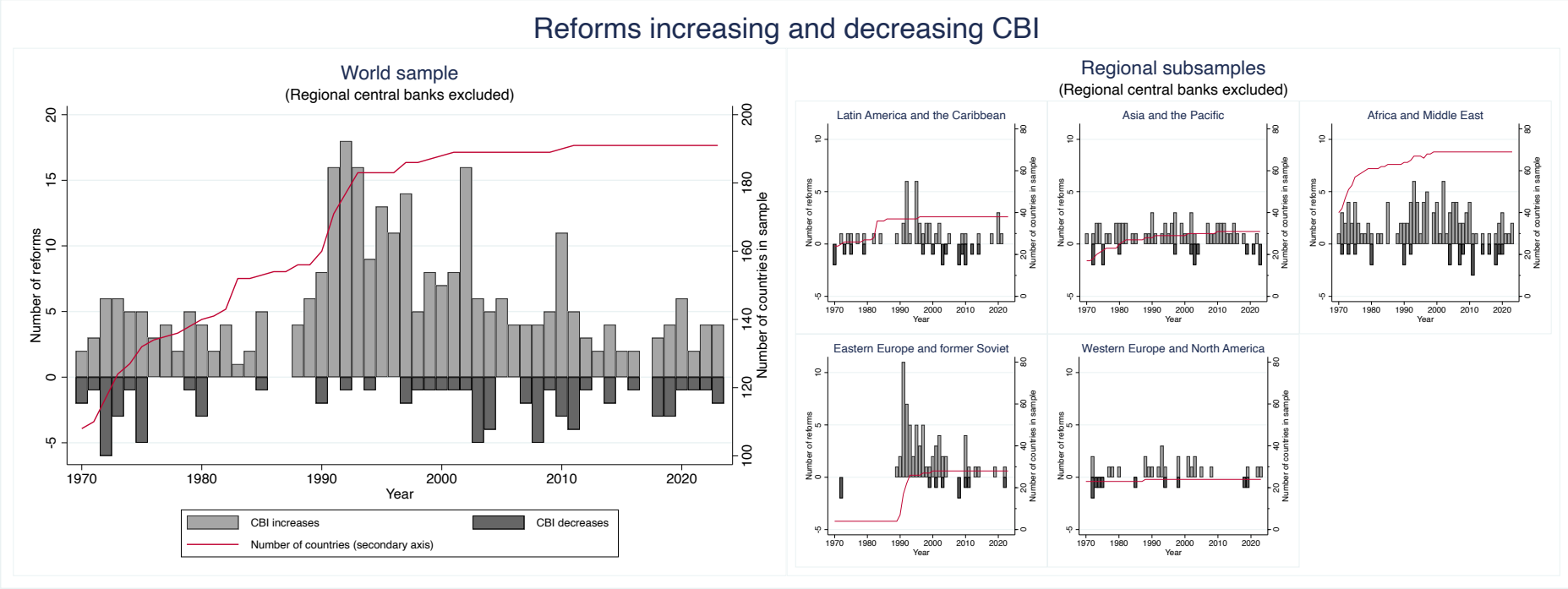
	Sample (number)	Polity 2	Inflation	GDP per capita	Trade openness	Capital openness	CBI weighted index (author's data)
Author	Included (N=8,546)	3.11	31.44	11,778.63	77.56	0.463	0.490
Garriga (2016)	Included (N=5,853)	3.13	38.99	10,658.15	73.985	0.457	0.468
	Excluded (N=603)	*-2.31*	*37.82*	*14,493.31*	*88.56*	*0.290*	*0.339*
Bodea&Hicks (updated)	Included (N=5,283)	4.52	34.49	11,544.38	75.638	0.497	0.488
	Excluded (N=2,726)	*-0.46*	*27.60*	*11,632.08*	*82.298*	*0.382*	*0.468*
Romelli (2022)	Included (N=5,820)	3.49	28.98	11,842.47	74.557	0.479	0.498
	Excluded (N=1,614)	*0.94*	*55.55*	*9,352.92*	*90.509*	*0.356*	*0.404*

Note: This table shows the mean of these variables in subsamples defined by other datasets ("included") and the observations included in this paper's dataset but excluded in the other sources ("excluded"). The purpose is to show that the difference in means for the included and excluded observations by dataset.

Appendix 5. CBI weighted index: partial correlation

	Author	Garriga	CWN	Bodea&Hicks	Romelli
Author	1.0000				
Garriga	0.9055	1.0000			
CWN	0.9086	0.9233	1.0000		
Bodea&Hicks	0.8843	0.8865	0.9153	1.0000	
Romelli	0.7507	0.6527	0.7417	0.8106	1.0000

Appendix 6. Count of reforms affecting CBI, and countries included in samples. Worldwide and regional subsamples excluding observations pertaining to regional central banks.



Note: To avoid overrepresenting the number of reforms to central banks, this figure omits observations from countries that joined regional central banks – reflected by the line of number of countries included in the samples.

Appendix 7. Association between CBI, inflation and unemployment. Additional models

Table 7.1. Association between CBI and inflation. Different datasets and samples. No lagged DV

Sample	Author	Garriga (2016)		Bodea-Hicks (updated)		Romelli (2022)	
CBI data source	*Author*	*Garriga*	*Author*	*Bodea-Hicks*	*Author*	*Romelli*	*Author*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CBI_{t-1}	-0.747**		-0.806**		-0.931**		-0.743**
	(0.035)		(0.042)		(0.042)		(0.041)
CBI_{t-1} (other)		-0.870**		-1.023**		-0.648**	
		(0.043)		(0.045)		(0.038)	
Observations	7,762	5,673	5,673	5,163	5,163	5,461	5,461
R^2 overall	0.0243	0.0254	0.0202	0.0272	0.0280	0.0125	0.0239
Countries	186	178	178	143	143	151	151
Years	1971-2022	1971-2013	1971-2013	1971-2021	1971-2021	1973-2018	1973-2018

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

Table 7.2. Association between CBI and inflation. Different datasets and samples. Fixed effects

Sample	Author	Garriga (2016)		Bodea-Hicks (updated)		Romelli (2022)	
CBI data source	*Author*	*Garriga*	*Author*	*Bodea-Hicks*	*Author*	*Romelli*	*Author*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CBI_{t-1}	-0.814**		-0.880**		-1.043**		-0.810**
	(0.037)		(0.044)		(0.044)		(0.043)
CBI_{t-1} (other)		-0.963**		-1.167**		-0.734**	
		(0.045)		(0.047)		(0.040)	
Observations	7,762	5,673	5,673	5,163	5,163	5,461	5,461
R^2 overall	0.0243	0.0254	0.0202	0.0272	0.0280	0.0125	0.0239
R^2 within	0.0612	0.0775	0.0691	0.108	0.0996	0.0603	0.0621
R^2 between	0.000754	0.000272	0.000557	0.000191	0.000836	0.00139	0.00176
Countries	186	178	178	143	143	151	151
Years	1971-2022	1971-2013	1971-2013	1971-2021	1971-2021	1973-2018	1973-2018

Notes: Coefficients after panel OLS regressions. Constant omitted. Standard errors in parentheses. * p<0.05, ** p<0.01.

Table 7.3. Association between CBI and unemployment. Different datasets and samples. No lagged DV

Sample	Author	Garriga (2016)		Bodea-Hicks (updated)		Romelli (2022)	
CBI data source	*Author*	*Garriga*	*Author*	*Bodea-Hicks*	*Author*	*Romelli*	*Author*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CBI_{t-1}	0.779**		1.917**		0.283		0.984**
	(0.231)		(0.264)		(0.280)		(0.257)
CBI_{t-1} (other)		1.751**		0.286		1.477**	
		(0.274)		(0.296)		(0.240)	
Observations	6,260	4,428	4,428	4,493	4,493	4,471	4,471
R^2 overall	0.0147	0.0206	0.0389	0.0234	0.0242	0.0241	0.0211
Countries	186	178	178	143	143	151	151
Years	1971-2022	1971-2013	1971-2013	1971-2021	1971-2021	1973-2018	1973-2018

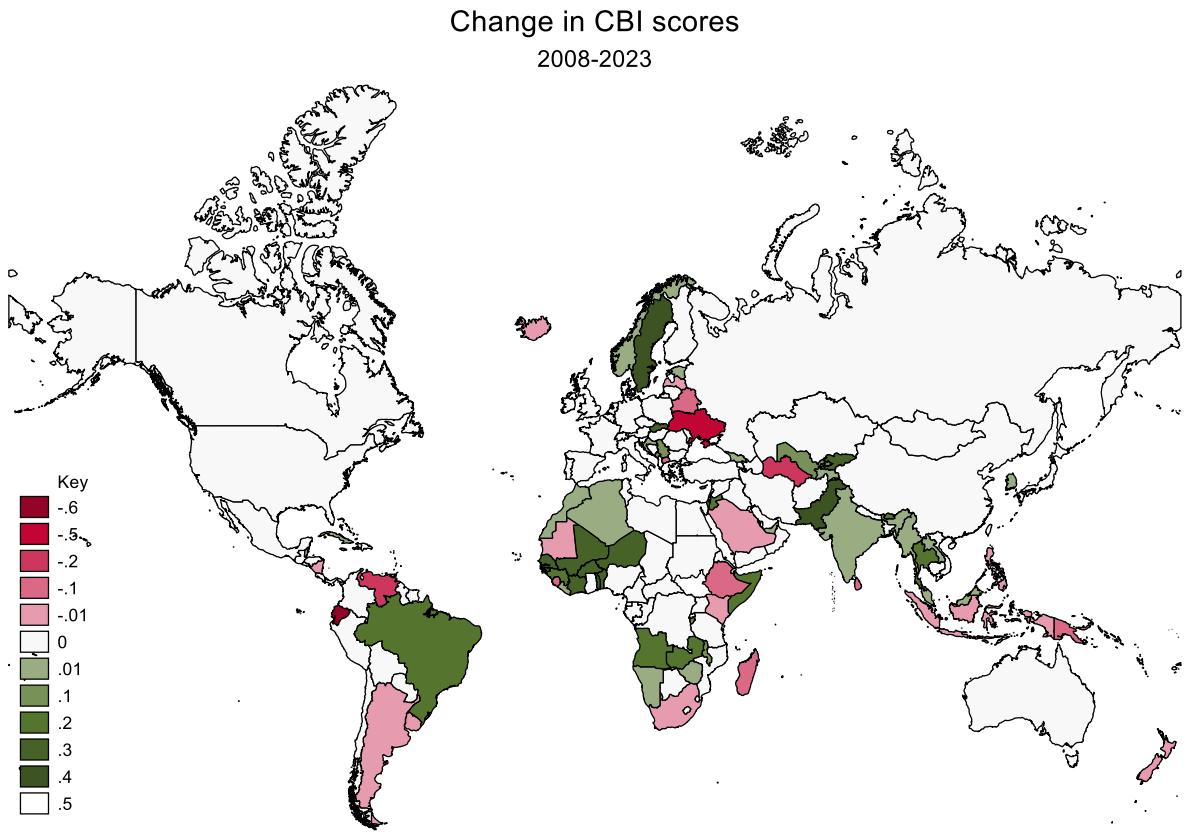
Notes: Coefficients after panel OLS regressions. Constant omitted. Standard errors in parentheses. * p<0.05, ** p<0.01.

Table 7.4. Association between CBI and unemployment. Different datasets and samples. Fixed effects

Sample	Author	Garriga (2016)		Bodea-Hicks (updated)		Romelli (2022)	
CBI data source	*Author*	*Garriga*	*Author*	*Bodea-Hicks*	*Author*	*Romelli*	*Author*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CBI_{t-1}	0.736**		1.838**		0.203		0.928**
	(0.232)		(0.265)		(0.281)		(0.258)
CBI_{t-1} (other)		1.698**		0.199		1.435**	
		(0.275)		(0.297)		(0.241)	
Observations	6,260	4,428	4,428	4,493	4,493	4,471	4,471
R^2 overall	0.0147	0.0206	0.0389	0.0234	0.0242	0.0241	0.0211
R^2 within	0.00165	0.00888	0.0112	0.000103	0.000120	0.00815	0.00298
R^2 between	0.0278	0.0344	0.0766	0.0547	0.0577	0.0360	0.0497
Countries	186	178	178	143	143	151	151
Years	1971-2022	1971-2013	1971-2013	1971-2021	1971-2021	1973-2018	1973-2018

Notes: Coefficients after panel OLS regressions. Constant omitted. Standard errors in parentheses. * p<0.05, ** p<0.01.

Appendix 8. Change in CBI scores 2008-2023.



Mercator projection. Antarctica and Greenland dropped from map.