(In)dependent Central Banks

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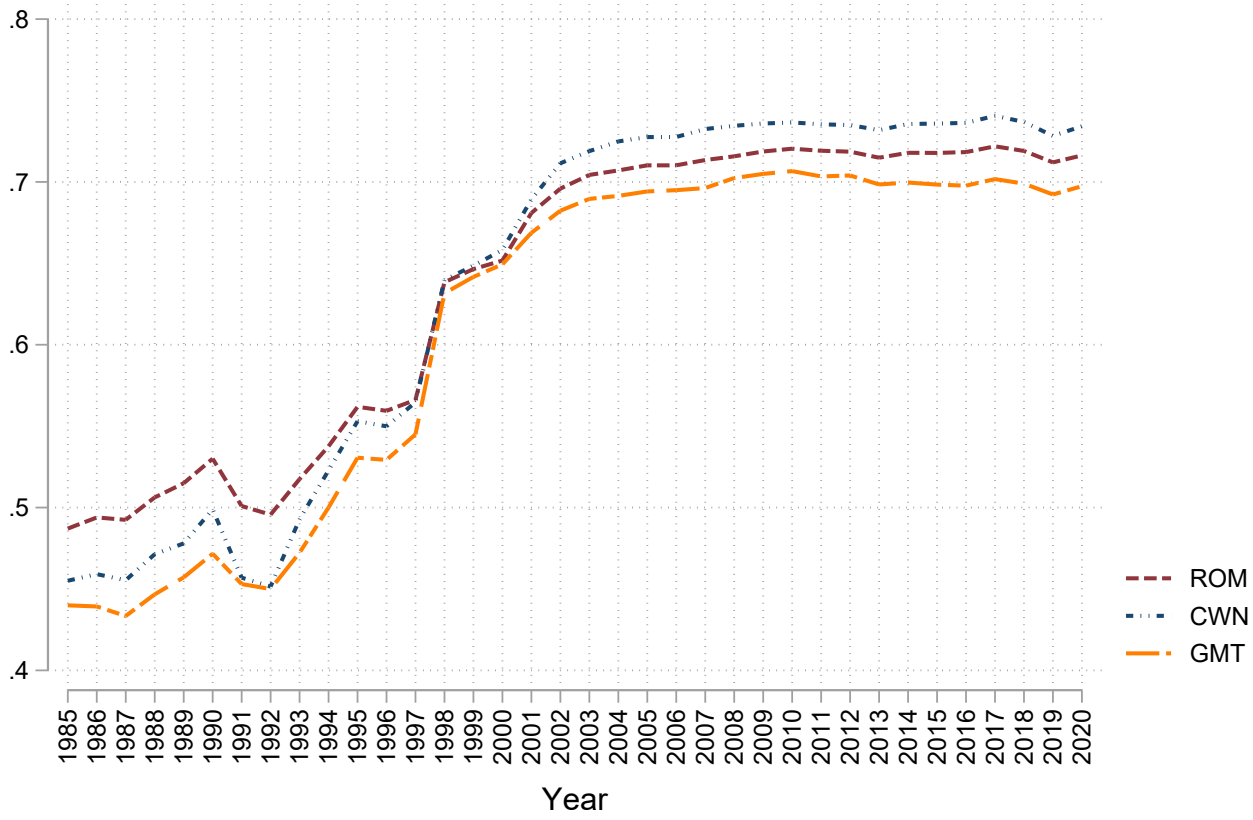
NBER SI, July 10 2024

Central bank independence (CBI)

- In the 1980s, CBI emerged as an **institutional solution** to:
  - Political business cycles (Alesina and Roubini, 1992).
  - Abuse of the central bank's money-printing powers to finance government spending (Ricardo, 1824).
  - The time-inconsistency problem generating inflation bias (Kydland and Prescott, 1977; Barro and Gordon, 1983).
  - Political convenience (Lohmann, 1997; Bernhard, 1998; Farvaque, 2002; Hallerberg, 2002).

The rise of de jure CBI

- The ↑ of *de jure* CBI has been quantified & documented.



- ROM: Romelli (2022); CWN: Cuckierman et al. (1992); GMT: Grilli et al. (1991).

▸ De jure CBI components

But...

De jure CBI $\neq$ De facto CBI

- Laws are incomplete.
- Actual practice may deviate.
- Reforms may give rise to a 'seesaw effect' (Acemoglu et al., 2008).

De facto CBI

- Political processes have a 'status quo bias'.
  - Fernandez and Rodrik (1991)
- One way politicians may try to **retain control** is by getting their **own people** into the top jobs.
  - Leaders matter (Jones and Olken, 2005; Funke et al., 2023).
  - Managers matter (Bertrand and Schoar, 2003).
  - Preferences and career concerns (Chang, 2006; Adolph, 2013).
- Anecdotal evidence is plentiful. ▸ The Economist

This paper

- Have central bank governor appointments become more, or less political, following reforms enhancing *de jure* CBI?
  - **Narrative #1:** + correlation
  - **Narrative #2:** no (or –) correlation
- **Politically-motivated appointments:** skewed towards candidates loyal to the appointing executive over the CB mandate.

This paper

- Have central bank governor appointments become more, or less political, following reforms enhancing *de jure* CBI?
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  - **Narrative #2:** no (or –) correlation
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Research questions

1. Which of these two narratives better describes the data?
2. Are political appointees less independent while in office?
3. Are they associated with worse policy outcomes?

What we DO

- Hand-collected **systematic information** on 316 CB governor appointments in 57 countries between 1985 and 2020.
- To determine whether an appointment was politically motivated, we combine **3 complementary** sources:
  - Bio, Press, Experts
- We compile the 3 sources into an **index** (0-1).
- We **"validate"** the index using governor turnover— a common proxy of *de facto* CBI (starting with Cukierman et al., 1992).

Biographical information

1. **Executive ties**
   - Employment ties (e.g., Minister of Finance)
   - Ideological ties (e.g., party membership)
   - Personal ties (e.g., family, friendship)
2. **Succession**
   - Natural successor
   - Predecessor forced to resign
   - Eligible predecessor not reappointed
3. **Education**
   - PhD or postgraduate degree in relevant discipline
4. **Experience**
   - At least two top-level professional positions

▸ Statistics

International press

- **Factiva search**
  - All major English-speaking newspapers.
  - 3 months around appointment.
  - Article must contain words pertaining to appointment.
- **Human reading**
  - Check if article about appointment.
  - Identification of passages suggesting political interference during appointment.
- **Human judgement**
  - Overall content & tone of the press.
  - Score (Yes/No).

Independent experts

- **Survey to independent academic experts**
- **Experts**
  - Specialization in Macro or Finance.
  - Affiliation with a university, national research and policy institution (not a central bank).
  - With >2 decades of experience.
  - With or without Anglo-Saxon training.
  - RePEc database & lists of NBER and CEPR affiliates.
- **Survey**
  - Sent to 587 academics (on average 10 per country).
  - Via email on February 7, 2020 (3 reminders).
  - Confidential agreement.
  - 289 responses received (b/w 3-8 per country).

Independent experts

- Each academic received a survey specific of their country of origin.
- Same 2 questions for each governor:
  - In your opinion, at the **time of the appointment**, was [...] a politically independent central bank governor?
  - In your opinion, **with the benefit of hindsight**, was [...] a politically independent central bank governor?
- **Answers:** "Yes", "No", or "I do not know" (+ comment).
- Construction of balance statistic [-1,1] to determine political interference (Pesaran and Weale, 2006).

Governor independence (GI) index

The six criteria are combined as:

$$GI_{it} = \frac{1}{n} \sum_{n}^{j=1} C_{it}^{j},$$

C_{it}^{j} equals 1 if appointment i at t is independent according to criterion j (out of n) and 0 otherwise.

Higher values $\rightarrow$ higher independence.

	N	Mean	SD
Criteria			
Executive ties	292	0.442	0.497
Succession	296	0.132	0.339
Education	307	0.450	0.498
Experience	297	0.778	0.416
International press	316	0.630	0.480
Independent experts	293	0.611	0.488
Index			
GI	257	0.499	0.252

▸ Correlations ▸ Validation ▸ Gap

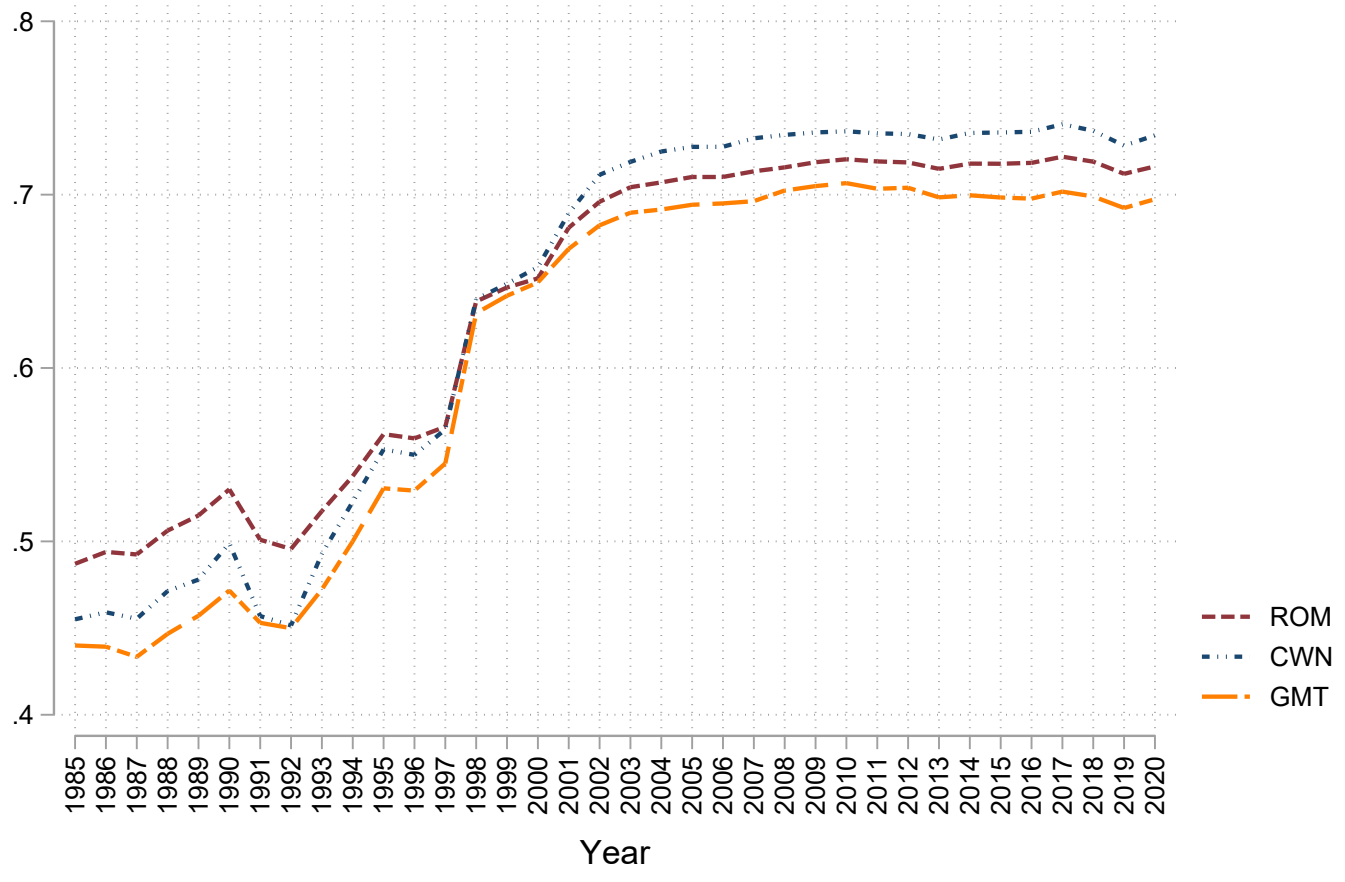
Alternative GI = 1 if executive ties, succession, press, and experts **all** = 1 (Bade and Parkin, 1988; Adrian, Khan, and Menand, 2024, for de jure).

Results road map

1. Have governor appointments become less political as *de jure* CBI ↑?
2. Are political appointees less independent while in office?
3. Are political appointees associated with worse policy outcomes?

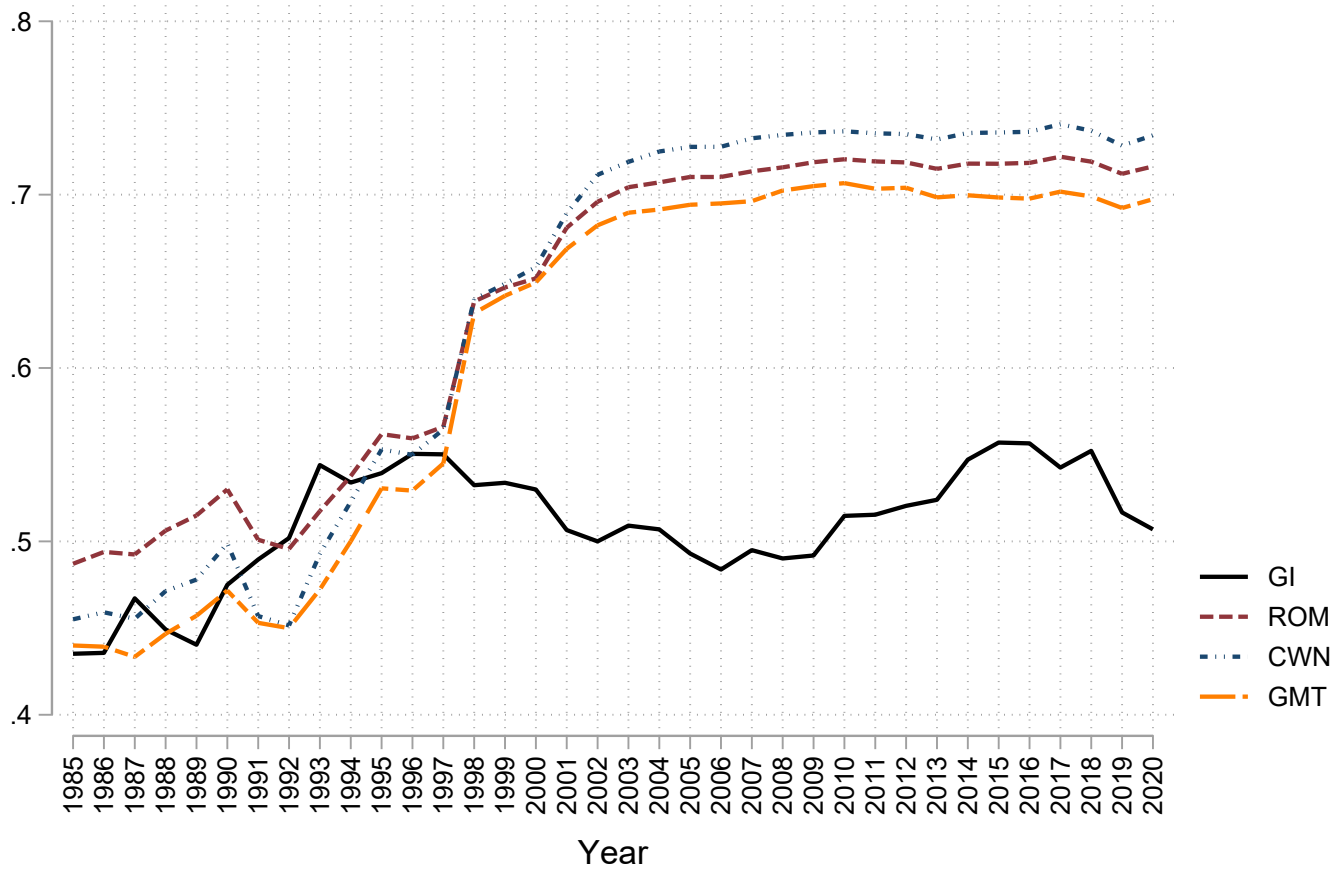
De jure CBI & GI: Visual illustration

- **De jure** CBI ↑



De jure CBI & GI: Unconditional

- **De jure** CBI ↑, but GI does not follow, if anything ↓ until GFC



De jure CBI & GI: Conditional

- No significant relation between *de jure* CBI & the governor independence index, GI, or any of its components

Dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	GI				Executive ties	Succession	Education	Experience	Press	Experts
De jure CBI	**-0.031**	**-0.046**	**0.097**	**0.126**	**0.330**	**0.115**	**0.070**	**-0.095**	**0.033**	**0.307**
	[-0.291]	**[-0.505]**	**[0.746]**	**[0.900]**	**[1.016]**	**[0.579]**	**[0.196]**	**[-0.382]**	**[0.104]**	**[1.008]**
Democratic accountability		0.052**	0.006	0.007	0.089*	-0.036	0.038	0.005	0.002	-0.056
		[2.559]	[0.335]	[0.369]	[1.742]	[-0.924]	[0.825]	[0.084]	[0.039]	[-1.219]
Law and order		0.018	0.027	0.028	0.018	-0.021	0.121**	0.026	0.044	-0.021
		[1.009]	[1.342]	[1.206]	[0.264]	[-0.424]	[2.088]	[0.491]	[0.839]	[-0.484]
Government stability		-0.003	-0.001	0.001	-0.019	-0.006	0.003	0.022	0.014	-0.007
		[-0.259]	[-0.123]	[0.091]	[-0.793]	[-0.346]	[0.126]	[1.020]	[0.497]	[-0.460]
Country FE			YES	YES	YES	YES	YES	YES	YES	YES
Decade FE				YES	YES	YES	YES	YES	YES	YES
Observations	239	224	223	223	223	223	223	223	223	223
R-squared	0.001	0.0870	0.415	0.416	0.343	0.468	0.359	0.259	0.389	0.534

▸ Robustness tests ▸ Regional Diffusion IV

Components of de jure CBI: Personal independence

- **No relation** with *de jure* component aimed precisely at **personal independence** (i.e., insulating appointment, tenure, and dismissal of governors from political interference).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent variable:				**GI**			
De jure CBI governance	**0.002**						**-0.024**
	[0.018]						**[-0.149]**
De jure CBI policy		0.220					0.239
		[1.607]					[1.101]
De jure CBI objectives			0.118				0.075
			[1.440]				[0.502]
De jure CBI lending				0.053			0.121
				[0.567]			[0.792]
De jure CBI finances					-0.120		-0.294
					[-0.634]		[-1.308]
De jure CBI accountability						0.027	-0.210
						[0.219]	[-1.077]
Other country characteristics	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES
Decade FE	YES	YES	YES	YES	YES	YES	YES
Observations	223	223	223	223	223	223	223
R-squared	0.414	0.420	0.421	0.415	0.415	0.414	0.429

A "Seesaw effect"

- Incentives to "undo" independence with political appointees ↑ as CBs & decision-making agents insulated from political pressure.

Dependent variable:	(1) GI	(2) Executive ties	(3) Succession	(4) Education	(5) Experience	(6) Press	(7) Experts
De jure CBI governance	0.051	0.444	0.075	0.247	-0.019	-0.077	0.197
	[0.395]	[1.594]	[0.508]	[0.824]	[-0.095]	[-0.265]	[0.717]
De jure CBI governance × Main policy reform	**-1.074*** **	**-0.974*** **	0.883***	**-3.056*** **	**-1.518*** **	-0.058	**-2.084***
	[-15.589]	**[-5.941]**	[8.228]	**[-11.339]**	**[-6.704]**	[-0.250]	**[-1.886]**
Main policy reform	0.636***	0.046	-0.482***	2.034***	0.986***	0.180	0.890
	[10.674]	[0.303]	[-4.236]	[9.161]	[5.111]	[1.091]	[1.083]
Other country characteristics	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES
Decade FE	YES	YES	YES	YES	YES	YES	YES
Observations	223	250	255	265	260	270	248
R-squared	0.421	0.353	0.467	0.313	0.275	0.381	0.511

▸ External constraints

Results road map

1. Have governor appointments become less political as *de jure* CBI ↑?
2. Are political appointees less independent while in office?
3. Are political appointees associated with worse policy outcomes?

Experts opinions: Tenure in office

- Survey: "In your opinion, with the **benefit of hindsight**, was [...] a politically independent central bank governor?"

Dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Experts (hindsight)									
GI	**0.782*** [10.703]**	**0.747*** [11.211]**	**0.617*** [8.199]**	**0.618*** [7.977]**						
Executive ties					**0.171*** [4.853]**					
Succession						0.033 [0.782]				
Education							**0.130** [2.606]**			
Experience								**0.115** [2.398]**		
Press									**0.139*** [3.406]**	
Experts										**0.457*** [12.255]**
ther country characteristics			YES	YES	YES	YES	YES	YES	YES	YES
Country FE			YES	YES	YES	YES	YES	YES	YES	YES
Decade FE				YES	YES	YES	YES	YES	YES	YES
Observations	258	242	240	240	248	252	262	256	269	269
R-squared	0.366	0.411	0.682	0.690	0.599	0.552	0.528	0.521	0.527	0.742

- Appointees viewed as more independent at appointment, they are also thought to have behaved more independently while in office.

Results road map

1. Have governor appointments become less political as *de jure* CBI ↑?
2. Are political appointees less independent while in office?
3. Are political appointees *associated* with worse policy outcomes?

Inflation during tenure

- More independent appointees attain lower inflation rates during their tenure and lower deviations from stated inflation targets.
- *De jure* CBI looses significance with country controls.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dependent variable:	Mean inflation (log)					Inflation gap			
Sample:					Excl. EZ				
De jure CBI	**-1.353*** **		**-1.282** **	-0.300	0.286	-0.100		0.215	-0.971
	[-2.756]		**[-2.265]**	[-0.690]	[0.512]	[-0.077]		[0.163]	[-0.723]
GI		**-1.720*** **	**-1.682*** **	**-0.843** **	**-0.768** **		**-2.502** **	**-2.409** **	**-2.715** **
		[-3.893]	**[-3.525]**	**[-2.470]**	**[-2.014]**		**[-2.333]**	**[-2.160]**	**[-2.218]**
Democratic accountability				-0.282**	-0.267**				-1.080
				[-2.396]	[-2.247]				[-1.365]
Law and order				-0.537***	-0.504***				0.010
				[-6.545]	[-6.008]				[0.049]
Government stability				-0.148**	-0.171***				0.231
				[-2.452]	[-2.718]				[1.331]
Decade FE				YES	YES				YES
Observations	307	268	246	219	188	59	57	54	50
R-squared	0.024	0.0607	0.081	0.478	0.439	0.000	0.092	0.083	0.268

- Graphs: ▸ inflation ▸ inflation gap

Crises during tenure

- No systematic relation between *de jure* CBI and crises.
- More independent governors are less likely to experience a sovereign debt or a currency crisis during their tenure.
- No systematic relation with banking crises.

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable:	Sovereign debt	Currency	Banking	Sovereign debt	Currency	Banking
Sample:				Excl. EZ		
De jure CBI	0.032	-0.008	0.197	0.015	0.083	0.060
	[0.533]	[-0.090]	[1.460]	[0.234]	[0.739]	[0.407]
GI	**-0.141*** **	**-0.194** **	-0.011	**-0.124*** **	**-0.238** **	-0.018
	[-3.078]	**[-2.057]**	[-0.113]	**[-2.711]**	**[-2.353]**	[-0.175]
Democratic accountability	-0.003	-0.005	0.001	-0.007	0.000	-0.005
	[-0.273]	[-0.260]	[0.050]	[-0.655]	[0.023]	[-0.179]
Law and order	-0.029**	-0.036**	0.028	-0.029**	-0.032*	0.034
	[-2.482]	[-2.187]	[1.403]	[-2.318]	[-1.737]	[1.629]
Government stability	-0.003	-0.020*	-0.003	-0.001	-0.022*	-0.008
	[-0.468]	[-1.774]	[-0.187]	[-0.107]	[-1.796]	[-0.516]
Decade FE	YES	YES	YES	YES	YES	YES
Observations	227	227	227	192	192	192
R-squared	0.119	0.076	0.108	0.137	0.071	0.063

Conclusion

- CBs **expanding powers** and global rise in **populism** likely to bring CB independence into question.
- More important than ever to understand **how far** do institutional reforms **insulate** CBs & their agents from political interference.
- Our results indicate that incentives to **undo** CBI through **political appointments** increase as *de jure* CBI increases.

De jure CBI indices

Criteria	GMT	CWN	ROM
Governor and Central Bank Board			
Who appoints the governor	*	*	*
Term of office of governor	*	*	*
Reappointment option for governor			*
Dismissal of governor		*	*
Governor allowed to hold another office in government		*	*
Qualification requirements for governor			*
Who appoints the board members	*		*
Term of office of board members	*		*
Reappointment option for board members			*
Dismissal of board members			*
Board Members allowed to hold another office in government			*
Qualification requirements for board members			*
Staggering term of office for board members			*
Government representatives in the board	*		*
Monetary Policy and Conflicts Resolution			
Who formulates monetary policy	*	*	*
Central bank responsible to fix key policy rates	*		*
Banking sector supervision	*		*
Central bank role in government's budget and/or debt	*		*
Final authority in monetary policy	*	*	*
Objectives			
Central bank's statutory goals	*	*	*

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De jure CBI indices (cont'd)

Criteria	GMT	CWN	ROM
Lending to the Government			
Direct credit: not automatic	*	*	*
Direct credit: market of lending		*	*
Who decides financing conditions to government		*	*
Beneficiaries of central bank lending		*	*
Direct credit: type of limit	*	*	*
Direct credit: maturity of loans	*	*	*
Direct credit: interest rates	*	*	*
Prohibition from buying government securities in primary market	*	*	*
Financial Independence			
Payment of the initial capital of the central bank			*
Authorized capital of the central bank			*
Central bank financial autonomy			*
Arrangements for automatic recapitalization			*
Transfers of money from the treasury			*
Central bank approves its annual budget			*
Central bank adopt its annual balance sheet			*
Auditing agency			*
Allocation of the net profits			*
Allocation of profits to the general reserve fund			*
Partial payments of dividends before the end of the fiscal year			*
Unrealized profits included in the calculation of distributable profits			*
Central Bank Reporting and Accountability			
Central bank reporting			*
Central bank financial statements			*

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Anecdotal evidence is plentiful



"President Donald Trump has demanded that interest rates should be slashed, speculated about firing the boss of the Federal Reserve... India's government has replaced a capable central-bank chief with a pliant insider who has cut rates ahead of an election... Rather than win by force of argument, they are seeking an edge by getting their own people into the top jobs." — The Economist (Apr. 2019)

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Biographical information

	N	Mean	S.D.
Executive ties			
Employment ties	297	0.269	0.444
Ideological ties	294	**0.446**	0.498
Family ties	299	0.030	0.171
Succession			
Natural successor	298	0.295	0.457
Predecessor forced resignation	297	**0.370**	0.484
No reappointment	297	0.599	0.491
Education			
PhD in Economics or Finance	307	**0.453**	0.499
Postgraduate degree in a related discipline	307	0.691	0.463
Experience			
Central bank (deputy or member of the board)	306	0.461	0.499
International organization	297	0.215	0.412
Branches of the government	299	0.575	0.495
Academic institution	299	0.455	0.499
Independent body in charge of economic affairs	297	0.111	0.315
Private financial sector	297	0.293	0.456
Central bank (other than deputy or member of the board)	297	0.303	0.460

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Validation

1. Turnover Rates
   - High turnover rates and departures prior to end of term have long been regarded as indicators of low *de facto* independence.
     - E.g., Cukierman et al., 1992, Cukierman and Webb, 1995, Dreher, 2006, Crowe and Meade, 2007.
   - We examine whether GI correlates **negatively** with prob of early departures using a Cox (1972) hazard model. ▸ Cox
2. Market reactions
   - Stocks & Bonds (to do)

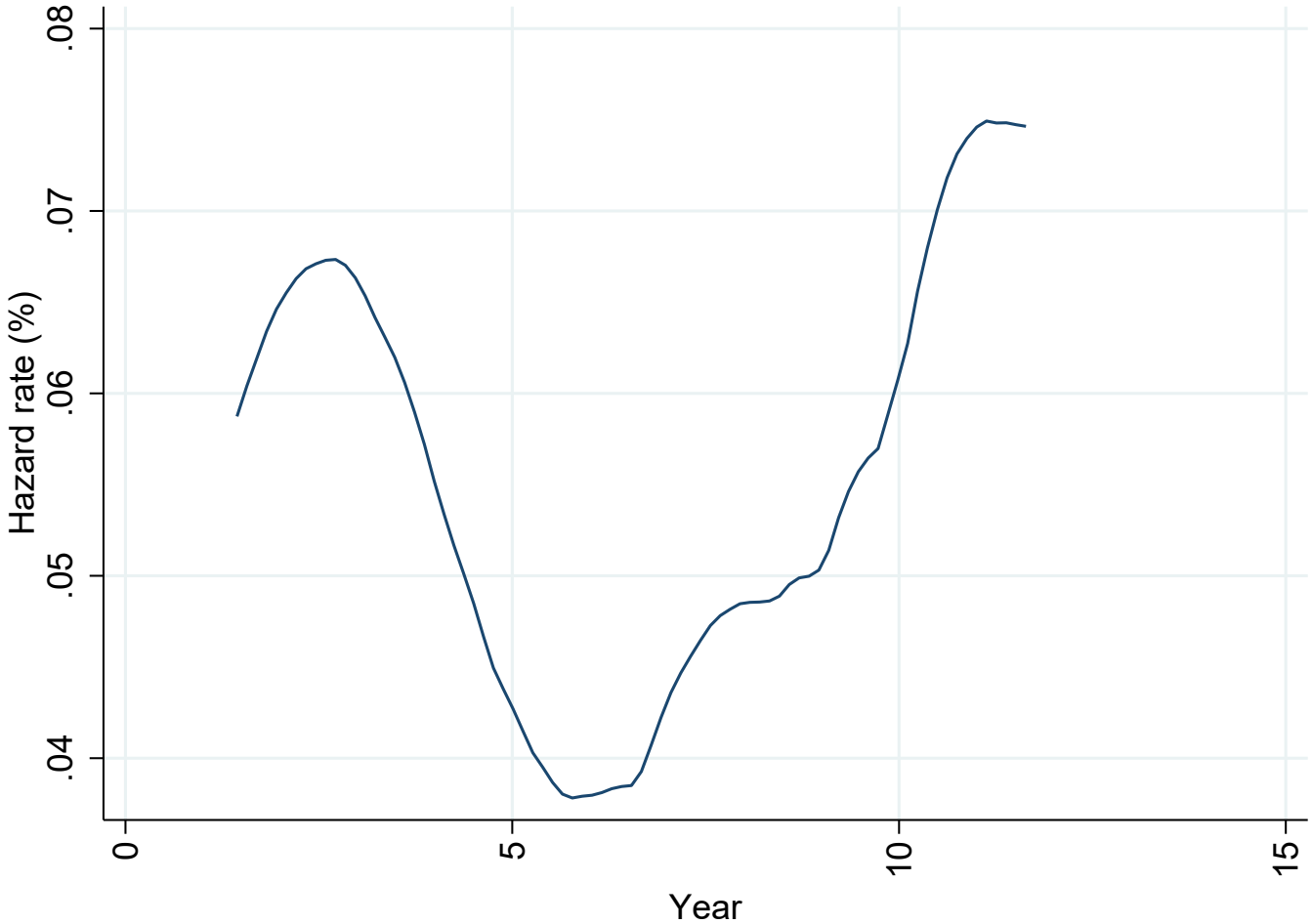
Validation

- We find that more independent appointments are associated with a lower hazard rate, indicative of higher de facto CBI.
  - ↑ 1-std dev (0.252) → 39.1% ↓ in hazard rate.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable:				$h_k(t)$				
GI	**-1.311*** [-3.022]**							
Executive ties		-0.275 [-1.095]						
Succession			-0.751** [-2.004]					
Education				0.093 [0.333]				
Experience					-0.460** [-2.088]			
Press						-0.567** [-2.395]		
Experts							-0.682** [-2.496]	
Experts (hindsight)								**-1.297*** [-3.108]**
Democratic accountability	-0.236** [-2.029]	-0.349*** [-3.202]	-0.355*** [-3.344]	-0.272** [-2.212]	-0.253** [-2.040]	-0.252** [-2.135]	-0.205 [-1.634]	-0.119 [-0.857]
Law and order	-0.214* [-1.873]	-0.141 [-1.321]	-0.135 [-1.301]	-0.173* [-1.707]	-0.181* [-1.765]	-0.155 [-1.570]	-0.190* [-1.815]	-0.223** [-2.152]
Government stability	-0.210** [-2.384]	-0.222*** [-2.653]	-0.191** [-2.214]	-0.153** [-2.257]	-0.145** [-2.143]	-0.162** [-2.303]	-0.172** [-2.527]	-0.148** [-2.203]
Country FE	YES	YES	YES	YES	YES	YES	YES	YES
Decade FE	YES	YES	YES	YES	YES	YES	YES	YES
Observations	241	270	275	284	278	291	269	269
Early departures	64	78	80	82	78	86	78	78

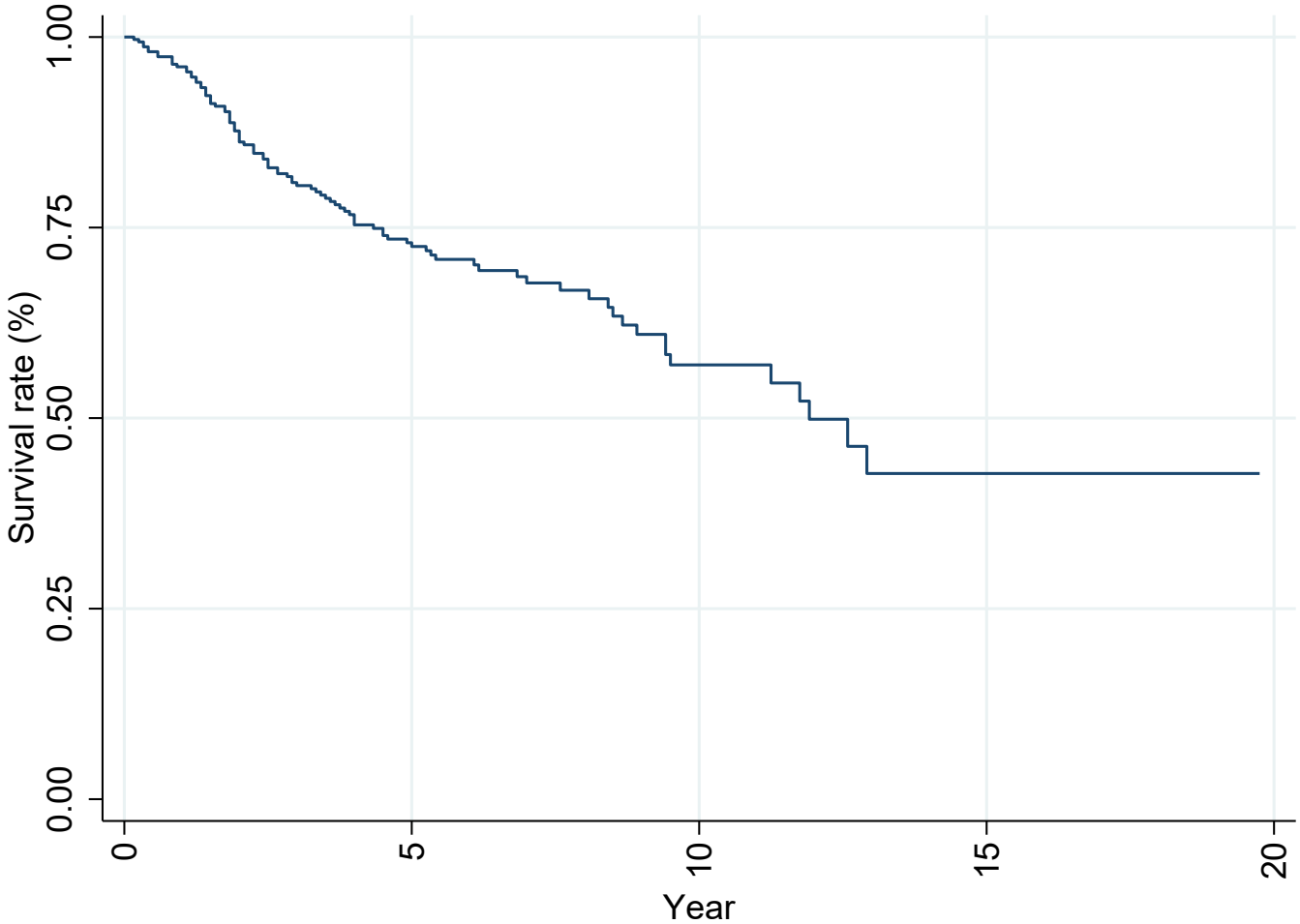
▸ Hazard rates ▸ Kaplan-Meier ◂ Back

Hazard rates



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Kaplan-Meier survival curve



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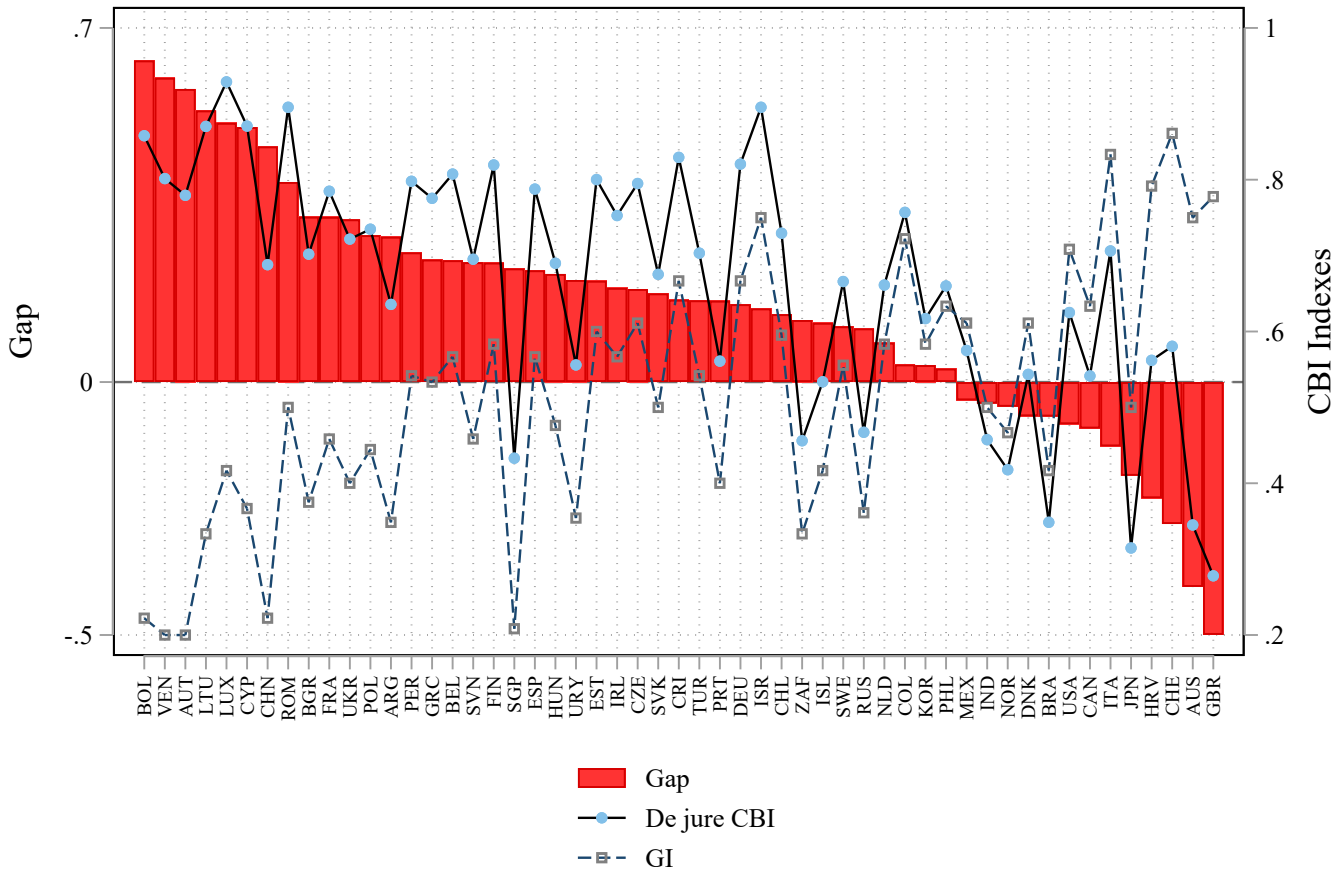
Correlation matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) GI	1.000										
(2) Executive ties	0.661***	1.000									
(3) Succession	0.376***	0.180***	1.000								
(4) Education	0.532***	0.132**	-0.134**	1.000							
(5) Experience	0.459***	0.067	0.102*	0.228***	1.000						
(6) Press	0.578***	0.355***	0.145**	0.020	-0.003	1.000					
(7) Experts	0.641***	0.271***	0.129**	0.286***	0.101*	0.181***	1.000				
(8) De jure CBI	-0.024	-0.026	-0.013	0.066	0.053	-0.089	-0.085	1.000			
(9) Democratic accountability	0.275***	0.102*	0.107*	0.074	0.112*	0.120**	0.153**	0.215***	1.000		
(10) Law and order	0.231***	0.120*	0.170***	0.103*	0.082	0.064	0.132**	0.016	0.578***	1.000	
(11) Government stability	0.039	-0.010	0.085	0.045	0.060	0.009	-0.009	0.058	0.265***	0.333***	1.000

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De jure CBI ≠ GI

- Positive gaps (red bars above zero) signify countries where the *de jure* index suggests a higher degree of CB independence than GI.



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Miguel Angel Fernández Ordóñez (aka MAFO)



	Answer	Coding
Executive ties		
Employment tie	YES	0
Ideological tie	YES	0
Family tie	YES	0
Succession		
Natural successor	NO	0
Forced resignation/No reappointment	NO	1
Education		
PhD in Economics or Finance	NO	0
Postgraduate degree in a related discipline	NO	0
Experience		
Central bank	YES	1
Branches of the government	YES	1
Other key positions	NO	0
International press		
# articles Coverage	31	0
Independent experts		
# responses (balance statistic)	-0.6	0

$$GI_{MAFO2006} = \frac{0+0+0+1+0+0}{6} = 0.17$$

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Robustness analysis

Dependent variable:	(1) GI	(2) GI	(3) GI	(4) Princ.Comp.	(5) Excl. Edu&Exp	(6) Alt. GI
Sample:	Developed	Developing	Excl. EZ CBs	All	All	All
De jure CBI	**0.280**	**-0.051**	**0.145**	**0.0161**	**0.218**	**0.310**
	[1.272]	**[-0.296]**	**[0.818]**	**[0.962]**	**[1.120]**	**[0.921]**
Democratic accountability	-0.019	0.006	0.005	0.000	-0.008	-0.046
	[-0.426]	[0.211]	[0.240]	[0.002]	[-0.343]	[-0.890]
Law and order	0.011	0.022	0.034	0.018	0.008	0.056
	[0.245]	[0.823]	[1.288]	[0.688]	[0.265]	[0.946]
Government stability	0.003	0.003	0.003	0.002	-0.005	-0.012
	[0.152]	[0.161]	[0.232]	[0.187]	[-0.357]	[-0.447]
Country FE	YES	YES	YES	YES	YES	YES
Decade FE	YES	YES	YES	YES	YES	YES
Observations	120	103	181	226	223	229
R-squared	0.404	0.412	0.451	0.376	0.417	0.277

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IV estimates

- Same results if instrument *de jure* CBI using regional diffusion (Abiad and Mody, 2005; Acemoglu et al., 2019).

Panel A: 2SLS estimates

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dependent variable:	GI				Executive ties	Succession	Education	Experience	Press	Experts
De jure CBI	0.174	-0.041	-0.033	-0.087	0.453	-0.527	-0.679	0.278	-0.556	0.506
	[0.901]	[-0.213]	[-0.151]	[-0.188]	[0.462]	[-0.860]	[-0.496]	[0.330]	[-0.572]	[0.567]
Democratic accountability		0.052**	0.013	0.009	0.088*	-0.030	0.045	0.001	0.008	-0.058
		[2.568]	[0.658]	[0.470]	[1.755]	[-0.695]	[0.906]	[0.018]	[0.141]	[-1.302]
Law and order		0.018	0.019	0.024	0.020	-0.032	0.108	0.033	0.034	-0.018
		[1.054]	[0.851]	[1.040]	[0.313]	[-0.667]	[1.604]	[0.628]	[0.603]	[-0.422]
Government stability		-0.003	-0.000	0.002	-0.020	-0.002	0.008	0.020	0.018	-0.008
		[-0.265]	[-0.037]	[0.196]	[-0.804]	[-0.115]	[0.283]	[0.804]	[0.576]	[-0.505]
Country FE			YES	YES	YES	YES	YES	YES	YES	YES
Decade FE				YES	YES	YES	YES	YES	YES	YES
Observations	239	224	223	223	223	223	223	223	223	223

Panel B: First-stage estimates

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2-11 Dependent variable:	De jure CBI				De jure CBI					
Regional CBI diffusion	0.622***	0.662***	0.649***	0.432***	0.432***	0.432***	0.432***	0.432***	0.432***	0.432***
	[5.42]	[5.69]	[6.78]	[4.36]	[4.36]	[4.36]	[4.36]	[4.36]	[4.36]	[4.36]
Partial R-squared	0.148	0.158	0.302	0.099	0.099	0.099	0.099	0.099	0.099	0.099
Excluded instruments (F-statistic)	29.418	32.355	45.944	19.043	19.043	19.043	19.043	19.043	19.043	19.043

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External constraints: EU & IMF

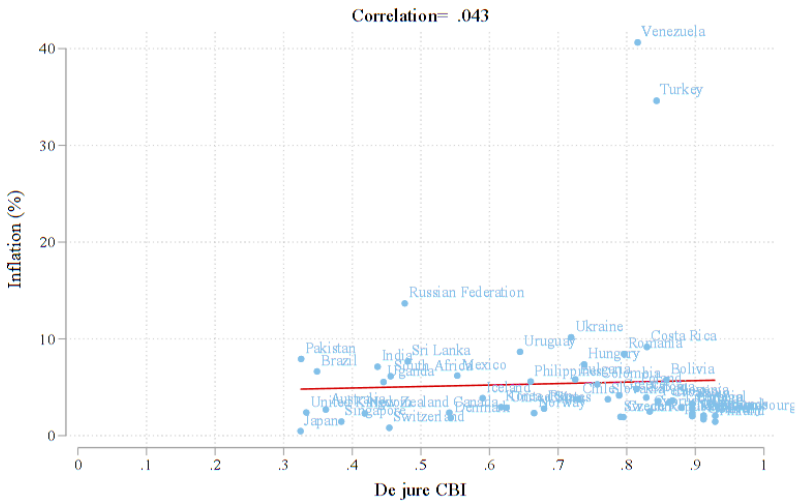
- *De jure* CBI correlates **positively** with more independent governor appointments when countries are subject to **external constraints**.

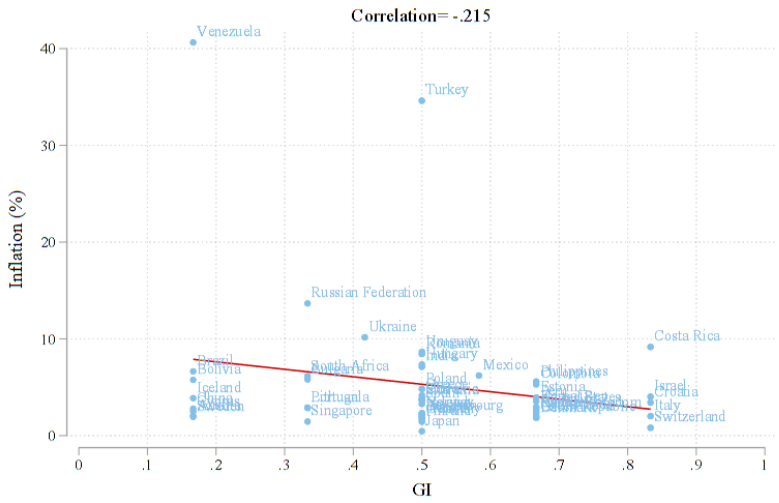
	(1)	(2)
Dependent variable:	GI	
De jure CBI	0.090	0.164
	[0.570]	[1.195]
EU accession	-0.366	
	[-1.353]	
De jure CBI × EU accession	**0.736***	
	[1.891]	
IMF program		-0.288
		[-1.460]
De jure CBI × IMF program		**0.785*** **
		[3.126]
Other country characteristics	YES	YES
Country FE	YES	YES
Decade FE	YES	YES
Observations	223	218
R-squared	0.431	0.432

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De jure CBI & inflation: Unconditional

- GI correlates **more strongly** with inflation than de jure CBI.

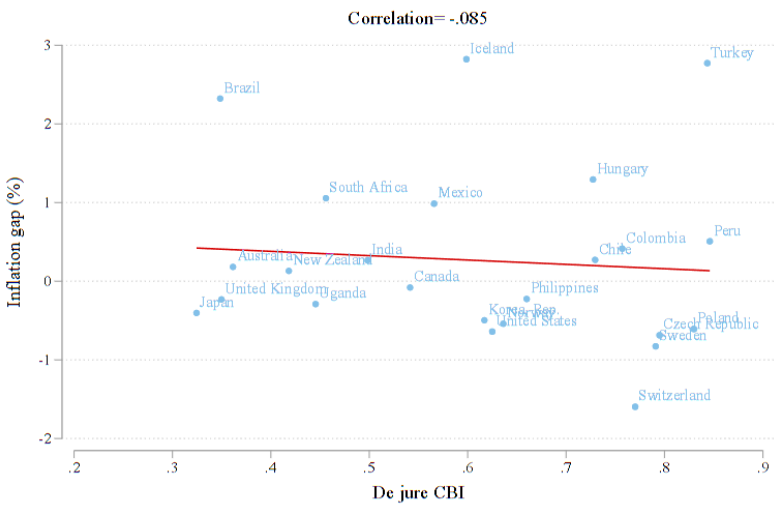


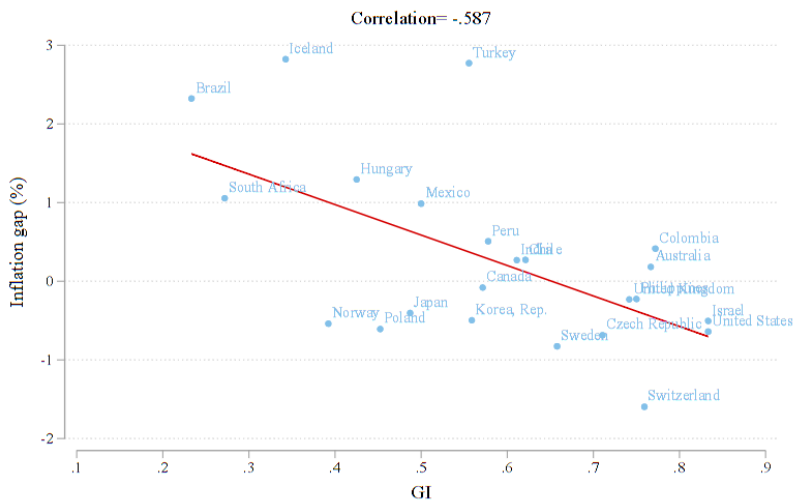


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De jure CBI & inflation gap: Unconditional

- Same result for **inflation gap** (inflation - target) for countries with an explicit inflation target.





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