

THE TUG OF WAR

GOVERNMENTS, CENTRAL BANKERS AND CLIMATE POLICIES: ECONOMICS AND POLITICS

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Outline

- ❑ **Four Steps:**
- ❑ 1) **Motivation:** Central Banks and Climate Change: A **Political** Economy Approach
- ❑ 2) **Facts:** Central Banks' Green **Activism**
- ❑ 3) **Analysis:** **Politicians**, Central **Bankers** and Climate Change Policies: A Walsh **Contract**
- ❑ 4) **Conclusion**

1) Motivation: Central Banks and Climate Change

- ❑ In recent years **governments** and **central banks** stressed the relevance of **climate** change
- ❑ **2015**: **196** national **governments** signed the **Paris** Agreement, aiming to limit **global** warming
- ❑ **2015**: Bank of England's (**BoE**) **Mike Carney** delivered his seminal speech at Lloyd's, zooming on climate change as a potential source of financial **instability**
- ❑ From that moment, central banks show an **increasing** and **heterogeneous** level of **green** activism both in the **monetary** and **prudential** areas
- ❑ Producing **mixing** reactions:



1) Motivation: Central Banks and Climate Change

- ❑ Producing **mixing** reactions:
- ❑ **Media:**
- ❑ “Climate Change should be tackled by the state, **not** central banks” (Tony Yates, FT, January 2024)
- ❑ **Politicians:**
- ❑ Project 2025, The Heritage Foundation, i.e. the so called “GOP Manifesto”, p. 740:
- ❑ “Elected official **must** clamp **down** on the **Fed’s** incorporation of **environmental**, social and governance factors into its mandate”
- ❑ **How** to explain it?



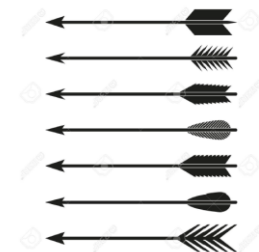
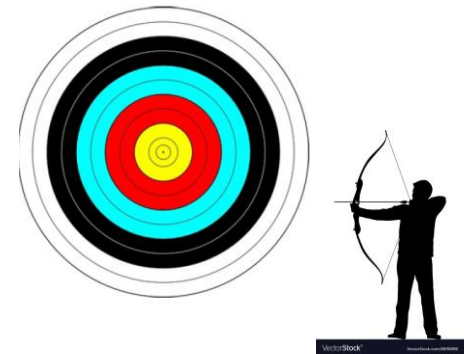
The **Economic** Approach (1/3)

- Most of the extant literature has adopted a standard **economic** approach to investigate the potential of central banks' climate action
- **Two** options has been used, given a standard **Three** Equation Model:

$$\pi = \pi^e + b\varepsilon y + (\mu - 1) + u$$

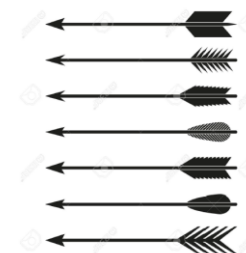
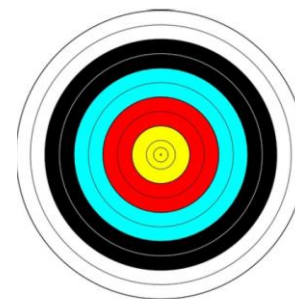
$$y = (a + m + l) - \pi + \phi\pi^e$$

$$\dot{i}_T = r^* + \pi + \alpha(\pi - \pi^*) + \beta(y - y^*)$$



The **Economic** Approach (2/3)

- ❑ **Two** options has been used:
 - ❑ 1) à la **Taylor**: **Explicit** climate targets are **exogenously** included in the central bank's **goal** function
 - ❑ 2) à la **Tinbergen**: **Multiple** policy **rules** are considered in order to **differentiate** the central bank's **tools** on a sectorial basis
- ❑ But **two** missing **points** emerge ...

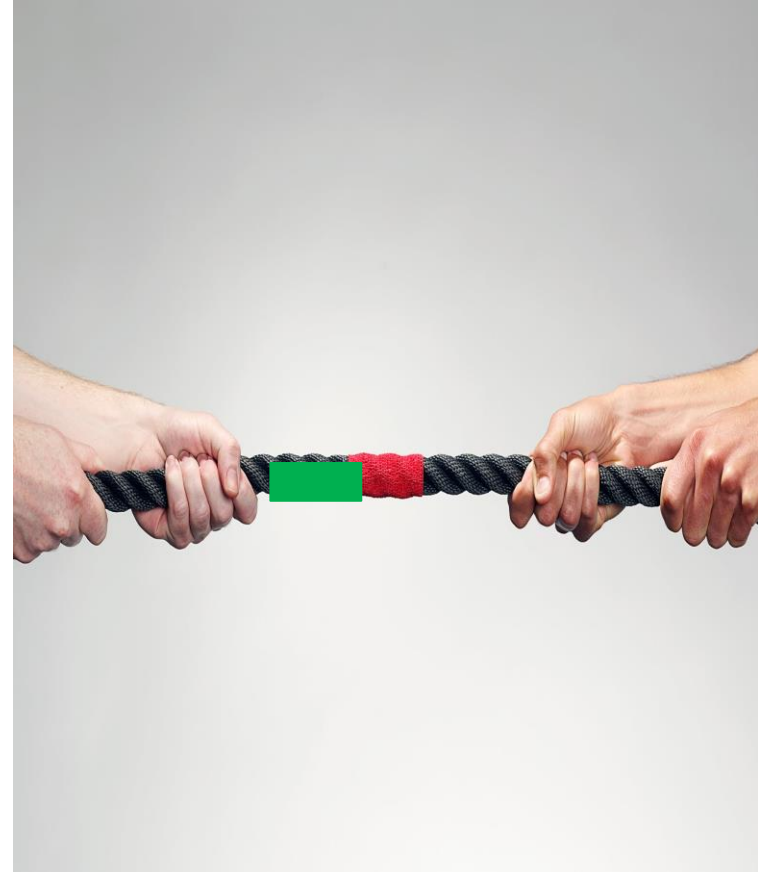


The **Economic** Approach: The **missing** points (3/3)

- ❑ 1) **First**, even if in economic terms this would provide relatively more efficient results , central banks' interventions **cannot** be envisioned as targeting an explicit climate objective but must **fall** within the scope of their **existing** ones (Dikau and Voltz 2021: only **16** central banks on **135** had an explicit environment mandate)
- ❑ 2) **Second**, this setting **neglects** a crucial fact: green activism implies central bank **non- neutrality**, which automatically means that **any** decision produces both **political** and **economic** effects
- ❑ For both reasons, a **political** economy approach can be adopted. Going into the details ...

A Political Economy Approach (1/3)

- **Intuition**: given the mandate, the central bank involvement in climate change policy is a **Tug of War**
- Where:
 - **Rope** = Legal **Mandate**
 - **Players** = Central **Banker** and the **Politicians**
 - **Outcome** = Central Bank **Involvement** in Climate Change **Policies** = how **green** becomes the **actual** mandate implementation



A Political Economy Approach (2/3)

- Details:
- Green activism produces an overlap of policy considerations among three different macro goals: monetary stability, financial stability and climate change
- in two different fields: monetary and banking policies
- But the more central banks would like to handle multiple goals, the more likely unpleasant trade-offs with redistributive effects can arise
- In turn, redistributive effects jeopardise the standard central banks' neutrality
- Then, the need to consider the relationships among politicians and central bankers comes in

A Political Economy Approach (3/3)

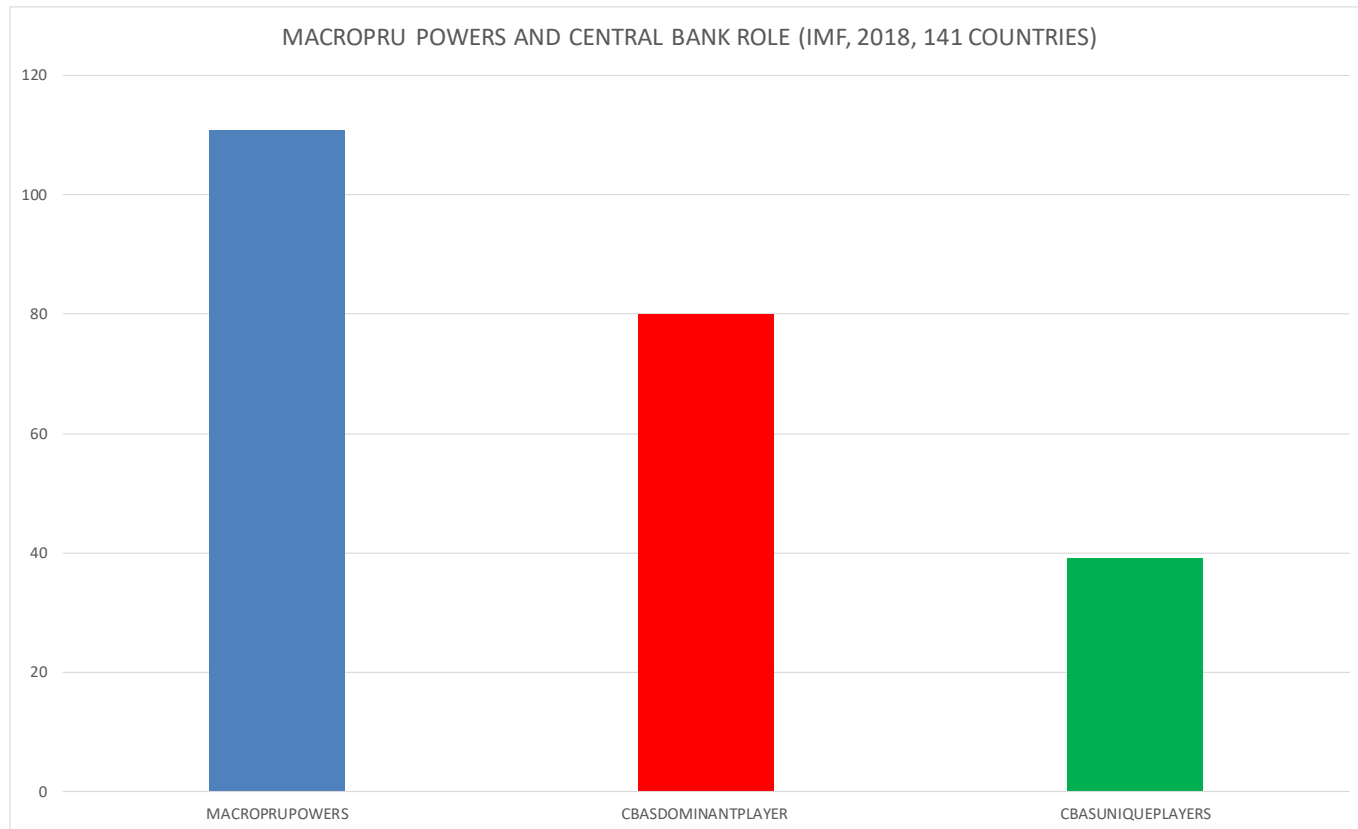
- ❑ A Political–economy approach (PEA) can address both the **economic** and the **political** perspective
- ❑ The PEA can be implemented using a **principal–agent** framework: central banker **contract** (CBC) approach
- ❑ The CBC approach can be interpret as an **implicit** Green **Memorandum** between the government and the central bank
- ❑ That allows to investigate in a **transparent** way the **interactions** between **politicians** and **central bankers** in designing **green** policies, **uncovering** the **inherent** trade-offs

Background Papers

- ❑ Society, Politicians, Climate Change and Central Banks: An Index of Green Activism, *Law and Economics Review*, 2021, 10(1), 34-107 (with R.V. Tarsia)
- ❑ Political Voice on Monetary Policy: Evidence from the Parliamentary Hearings of the European Central Bank, *European Journal of Political Economy*, 72, 102143, 2021, (with F.Ferrara, D. Romelli and M. Moschella)
- ❑ *Central Banks and Climate Policy: Unpleasant Trade-Offs? A Principal – Agent Approach*, Bocconi University, Baffi Centre Working Paper Series, 2022, n. 181 (with R.Russo)
- ❑ *Designing a Green Memorandum: Central Bankers, Politicians, Monetary Policy and Macroprudential Regulation* (with G. Chortareas and R. Russo), 2023, mimeo

2) Facts: Given the **Institutional** Setting ... (1/5)

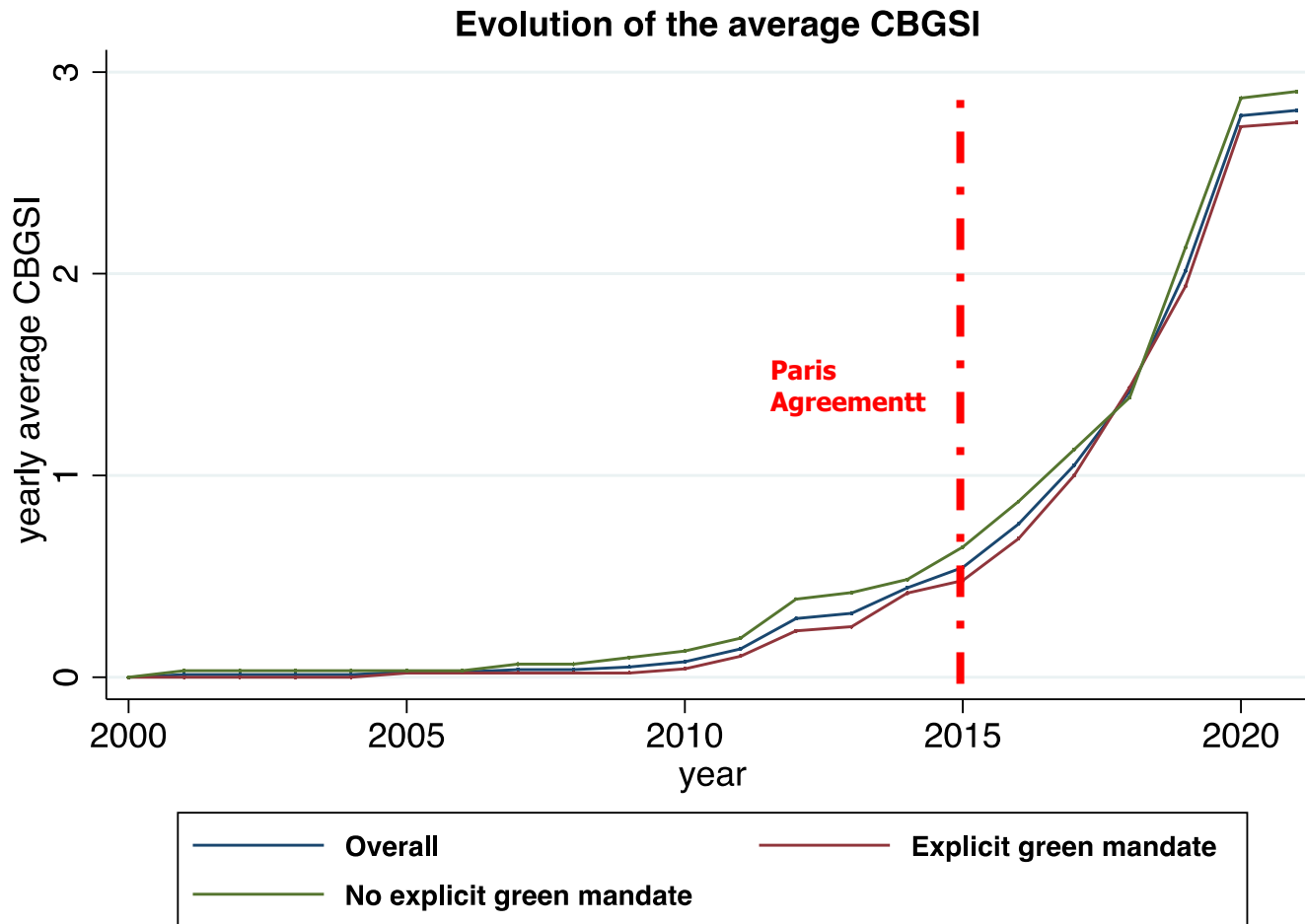
- ❑ **Institutional** setting: the central bank is likely to manage both **monetary** and **banking** tools
- ❑ and **climate** change considerations can impact **both** fields:



2) Facts: Central Bank Green **Activism** is ... (2/5)

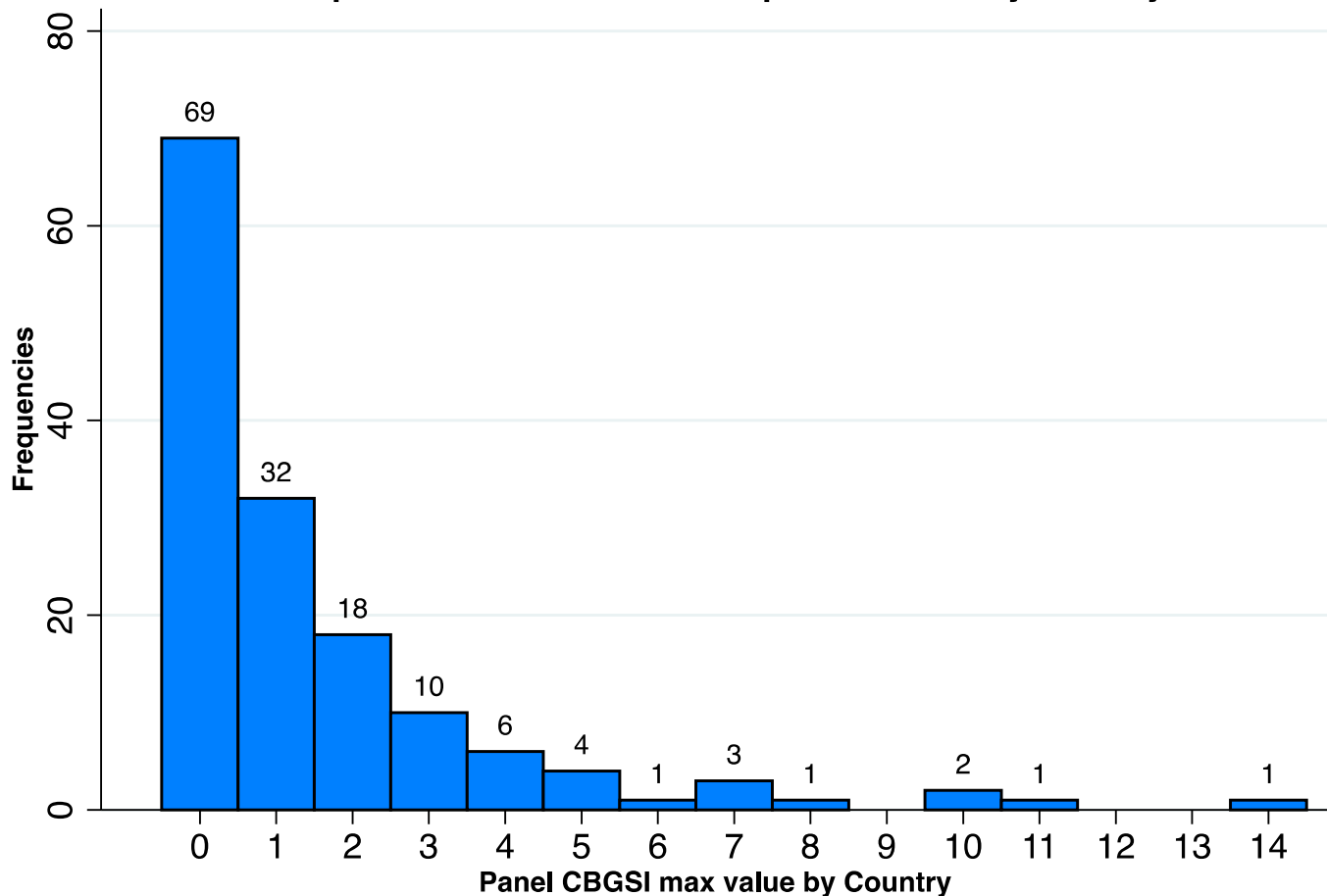
- The Central Bank Green **Activism** can be evaluated building up a **metric** that include a wide **range** of central bank **activities** that are associated with **climate** change issues, as:
 - 1) Green Network **participation**; 2) Incorporation of **ESG** criteria in central banks portfolio management; 3) Integration of climate risk into **prudential** policy; 4) guidelines on **environmental** risk management; 5) green **bond** support programmes; 6) green **lending** guidelines; 7) green **reports**; 8) **mandate** updated to incorporate green activities; 9) **incorporation** of sustainable practices into central bank activities as an institution,
- The resulting CB Green Sensibility **Index** (from 0 to 14) shows that ...

2) ... increasing ... (3/5)



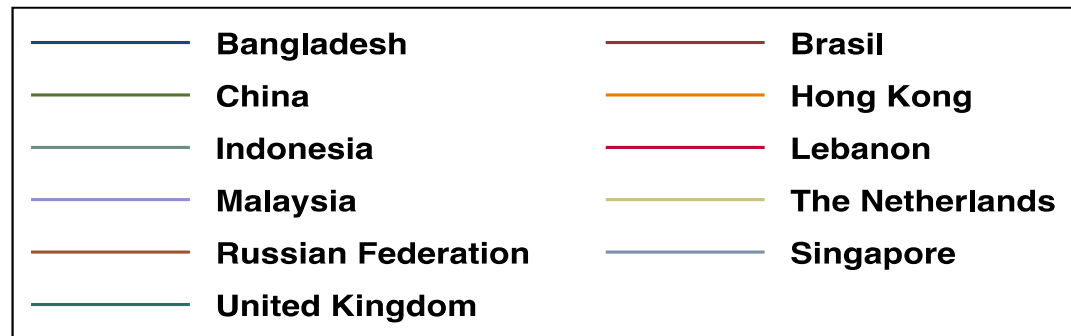
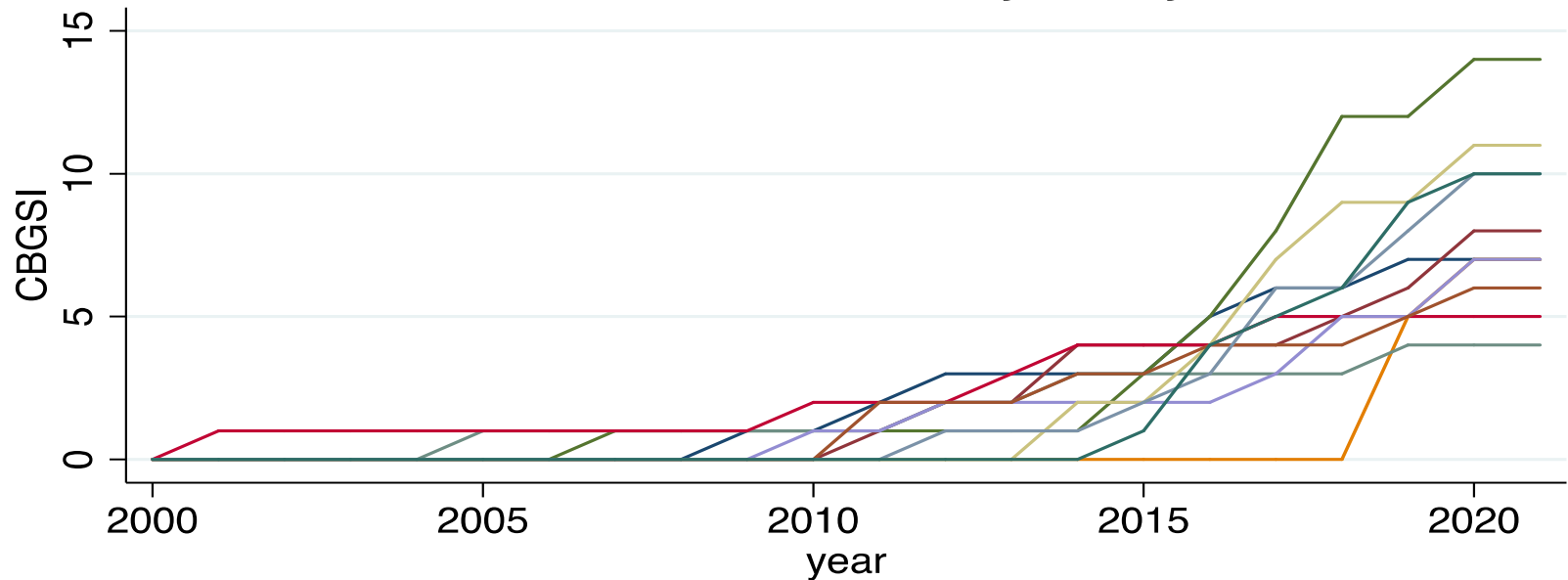
2) ... in a really **heterogeneous** way, both in terms of **levels** ... (4/5)

Frequencies of the maximum panel CBGSI by country



2) ... and dynamics too; Why? A Political Economic View ... (5/5)

Evolution of the CBGSI by country



3) **Politicians, Central Bankers and Climate Change Policies: A Walsh Contract**

- ❑ The **relationships** between politicians, central bankers and climate change policies can be analysed using a Walsh (**contingent** contract) approach (Masciandaro and Russo 2022, Cortareas et al. 2023)
- ❑ **General** Setting, in terms of :
 - ❑ 1) **Economics**
 - ❑ 2) **Politics**
- ❑ Going ahead ...

Economics

- ❑ 1) **Economics**:
- ❑ In the economy there are **two** productive sectors, **brown** and **green**. The **former** is exposed to a climate **shock**, which reflects environmental risks, the **latter** is not
- ❑ The **central bank** controls both **monetary** and **prudential** policies
- ❑ **Green** activism can influence **prudential** policies
- ❑ The interactions between the economy and the policy choices influences:
 - ❑ **output growth** and
 - ❑ **inflation**

Politics

- ❑ **Baseline Scenario, 2) Politics:**
- ❑ a) Government and central bank do **not** share the **same** loss function
- ❑ b) **Government** members = **Helping hand** career concerned **politicians** = **benevolent**, but **myopic** players
- ❑ c) **Central bank** board members = **Career** concerned **bureaucrats** = **hawkish/dovish** players
- ❑ d) Given that in a **constitutional** stage a **legal** monetary **dominance** regime has been defined: **Non – neutral** policies do **not** fall in the central bank constitutional **mandate**, including the **green** ones
- ❑ e) **Actual** independence can differ from **legal** independence. In fact

The **Baseline** Scenario (1/3) : **Legal** Independence (ECB 2020) ...

Table 1

Selected indices of central bank independence

(main components of the indices)

| Grilli, Masciandaro and Tabellini (1991) | Cukierman, Webb and Neyapti (1992) |
|---|---|
| Political independence | Legal independence |
| 1. Governor not appointed by government | 1. Chief Executive Officer (CEO): |
| 2. Governor's term > 5 years | <ul style="list-style-type: none"> • term of office; |
| 3. All Board members not appointed by government | <ul style="list-style-type: none"> • appointed by; |
| 4. Board term > 5 years | <ul style="list-style-type: none"> • dismissed by; |
| 5. No mandatory government representative on Board | <ul style="list-style-type: none"> • possibility of holding other offices in government. |
| 6. No government approval for monetary policy formulation | 2. Policy formulation |
| 7. Statutory requirement to pursue monetary stability | <ul style="list-style-type: none"> • Who formulates monetary policy? |
| 8. Provisions to strengthen the central bank in the event of conflict with the government | <ul style="list-style-type: none"> • Who has the final word in the resolution of conflict? |
| Economic independence | <ul style="list-style-type: none"> • Bank's role in the government's budgetary process? |
| 1. Direct credit facility to government is: | 3. The objectives of the central bank |
| <ul style="list-style-type: none"> • not automatic; | <ul style="list-style-type: none"> • Price stability is sole objective or one among others |

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The **Baseline** Scenario (1/3) : ... vs **Actual** Independence (Metrics: Binder, JMCB 2020)

CAROLA CONCES BINDER : 725

TABLE 4
CORRELATION BETWEEN LEGAL CBI INDICES AND POLITICAL PRESSURE MEASURES

| Variable | | $\hat{P}_i > 0$ | \hat{P}_i | \hat{p}^{cat1}_i | \hat{p}^{cat2}_i |
|------------------------|-----------------|-----------------|-------------|--------------------|--------------------|
| Garriga index | CWN 1992 | -0.12 | 0.00 | -0.10 | 0.07 |
| | | -0.21 | -0.97 | -0.32 | -0.44 |
| Objective independence | | -0.11 | 0.00 | -0.06 | 0.05 |
| | | -0.26 | -0.96 | -0.52 | -0.64 |
| CEO independence | | -0.03 | 0.05 | -0.04 | 0.11 |
| | | -0.76 | -0.59 | -0.70 | -0.27 |
| Political independence | | -0.04 | 0.09 | -0.05 | 0.17 |
| | | -0.65 | -0.36 | -0.61 | -0.08 |
| Limits on lending | | -0.11 | -0.05 | -0.09 | 0.01 |
| | | -0.23 | -0.62 | -0.34 | -0.95 |
| Arnone et al.'s index | GMT 1991 | -0.02 | -0.07 | -0.11 | -0.01 |
| | | -0.84 | -0.49 | -0.25 | -0.96 |
| Political autonomy | | -0.06 | -0.05 | -0.06 | -0.02 |
| | | -0.54 | -0.62 | -0.52 | -0.82 |
| Economic autonomy | | 0.05 | -0.06 | -0.13 | 0.02 |
| | | -0.58 | -0.55 | -0.19 | -0.81 |

NOTES: This table shows correlation coefficients between legal CBI indices or subindices and measures of political pressure on central banks. Below each correlation coefficient is the p -value for the test that the correlation coefficient is statistically significantly different than zero. Legal CBI data are from Garriga (2016) (averaged over 2010–2012) and Arnone et al. (2007) (for 2003). First column ($\hat{P}_i > 0$) is an indicator that there are any reports of political pressure for the central bank. \hat{P}_i is the fraction of quarters for which there is pressure on the bank. \hat{p}^{cat1}_i

The **Baseline** Scenario (1/2)

- ❑ Then an **implicit** and **contingent** contract (**CC**) can **influence** the central bank behaviour ...
- ❑ Baseline Scenario **without** a CC:
- ❑ The **brown** sector does **not** internalize the future output **losses** it causes
- ❑ The **central** bank implements **neutral** policies both in the **monetary** and in the **prudential** fields
- ❑ The government **acknowledges** the brown sector **negative** spillovers
- ❑ Moreover, the government knows that the brown sector can **invest** in **green** technology, but it considers them **adaptation** costs
- ❑ Then **two** cases can arise ...



The **Baseline** Scenario (2/2)

- ❑ Baseline Scenario **without** a CC:
- ❑ Then two cases can arise, assuming the **government myopic** perspective:
 - ❑ 1) If the **adaptation** costs are **higher** than the brown sector negative **spillovers** to the **overall** economy
 - ❑ The government is **brown** as well, and it does not offer any CC
- ❑ 2) If the **adaptation** costs are **lower** than the brown sector negative **spillovers**
- ❑ The government becomes **green**, and it is ready to **offer** an implicit CC ...



The Green Memorandum Scenario (1/2)

- ❑ The Government can offer a Green Memorandum (GM) to the central bank
- ❑ The GM represents a legitimacy signalling that allows the central bank to disfavour the brown sector and promote the green transition
- ❑ As any CC the GM is a “stick and carrot” device:
 - ❑ -The GM lets the central bank to introduce a “tilt factor” penalizing the allocation of financing to the brown sector
 - ❑ -A punishment is present, representing the central bank disutility of a political stigma, influencing the central bank actual independence
- ❑ Depending on the climate preferences of government and central bank, the GM can be interpreted in either a hostile or cooperative equilibrium

The **Green** Memorandum Scenario (2/2)

- ❑ **Hostile** equilibrium: a **green** government bend a **hawkish** central bank to its **political** agenda
- ❑ **Cooperative** equilibrium: the GM allows a **dovish** central bank to **stretch** its mandate
- ❑ In any case, now the central bank is allow to take **preventive** action to **incentivize** the **brown** sector to become **green**
- ❑ The central bank applies the **tilt** factor, calibrating the **prudential** policy
- ❑ The tilt factor should be **large** enough for its implied **losses** to exceed those the brown sector would bear to **adapt**
- ❑ Being **uncertainty**, it's a scenario with **multiple** equilibria ...



Green Equilibrium vs Brown Restrictive Equilibrium

- Where two extreme opposite situations can arise:
 - 1) The tilt factor losses are bigger than the adaptation costs = green equilibrium
 - 2) The tilt factor losses are lower than the adaptation costs = brown restrictive equilibrium
- The brown sector would not switch, and simultaneously a relative restrictive prudential policy will be in action
- The more the restrictive action will cause aggregate effect, the more likely will be both intended and unintended non-neutral effects
- Under some conditions, a green activism paradox can emerge: green firms are relatively more penalized

Conclusion

- ❑ In these years **all** central banks address climate risks, in defining and implementing both **monetary** and **macro prudential** policies.
- ❑ The green activism shows a high degree of **heterogeneity**
- ❑ **Political** economy **explanation**: green activism is the actual **outcome** of an **implicit** contract between **government** and **central bank** that defined which actions are at the same time **economically** and **politically** feasible
- ❑ **Theoretical** extension: Grabbing hand perspective, green activism in both monetary and banking field
- ❑ **Empirical** extensions: uncovering the **actual** implicit contracts using **text-analysis** (Ferrara et al. 2021), building up consistent **metrics**, testing their **macro** impact

That's all Folks!