

# Debt Relief Games

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Preliminary results - June 2023

*The views expressed in this presentation are those of the authors and not necessarily the views of the BIS.*

# Motivation

- Difficulties in operationalising debt restructuring through the newly minted G20 Common Framework show that successful coordination in burden sharing among different types of creditors is key for speedier sovereign debt restructurings...
  - Comparability of treatment (COT) principle, a cornerstone principle for Paris Club operations was transposed in the workings of the CF as the way to achieve adequate burden-sharing
- **...but coordination is becoming increasingly hard to achieve** (Rivetti 2022; Buchheit and Gulati, 2023)
  - During 80s: public sector pressures crucial for COT application (Rieffel 2003; Jossline 2009)
  - From mid-90, partly due to diversification of creditor types, cooperation weakened
  - Emergence of new commercial creditors and non-Paris Club official creditors (like China) with a preference for bilateral approach to debt restructurings (Buchheit and Gulati, 2023)

21 June 2023



## PRESS STATEMENT

### **PARIS FORUM: THE 10<sup>TH</sup> ANNUAL CONFERENCE OF THE PARIS CLUB ADDRESSES PUBLIC DEBT RESTRUCTURING COORDINATION IN A CHALLENGING ENVIRONMENT**

The 10<sup>th</sup> edition of the Paris Club annual meeting, known as the Paris Forum, was held on 21 June 2023, at the Ministry for Economy, Finance and Industrial and Digital Sovereignty, with the support of the G20 India's Presidency. This edition, titled *Coordinating Sovereign Debt Restructurings in a Complex Environment*, gathered over 200 participants representing 80 countries and institutions.

In addition to Paris Club creditors, the 10<sup>th</sup> edition of the Forum brought together non-member creditor countries including India, China, and Saudi Arabia. The event also saw the participation of around twenty borrowing countries, represented by a dozen ministers, as well as academics, NGOs, and representatives from around twenty private sector organisations. The 2023 edition of the Paris Forum covered a diverse range of topics, encompassing macro-level discussions, including creditor coordination – both within and outside of the Common Framework – and the ways to improve it. These discussions are crucial given the current sovereign debt landscape.

# What do we do?

- **We propose a way to examine historical restructuring data by constructing indicators of de facto coordination**
  - Define debt relief games: a creditor initiates a game and is followed (or not) by other creditors
  - Construct indicators of successful and failed leadership and indicators defining when creditors acted as followers
- **Through these game-based lenses, we can study a range of issues:**
  - Does the historical record support coordination? Who and when leads?
  - Do debt treated volumes and restructuring terms vary depending on who leads and who follows?
  - Does it matter? Does coordination affect macroeconomic outcomes?

Data and key variables

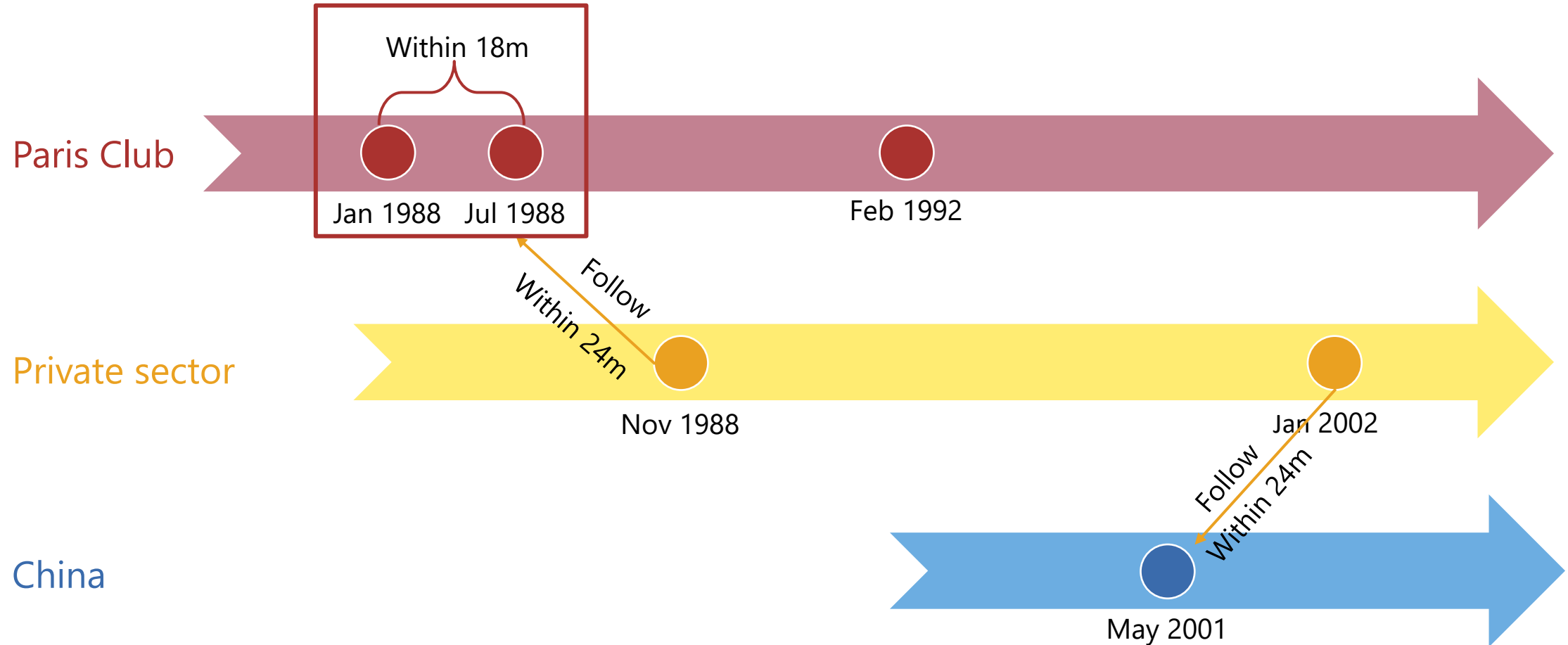
# Data collection

- We pull together (and update) databases of debt restructurings with three types of creditors:
  - Paris Club (Cheng et al. 2018, updated): 1956-2019
  - Private sector (Asonuma and Trebesch 2016, updated): 1978-2019
  - China, biggest non-Paris Club bilateral official creditor (Bon and Cheng 2020, Acker, Brautigam and Huang 2020, AidData 2021, updated): 2000-2019
  - We purposely leave the DSSI and the Common Framework aside
- Restructuring data complemented with
  - Macroeconomic variables (IMF WEO, World Bank WDI)

# Data transformation

- **Bundling restructuring events into restructuring episodes**
  - Within each creditor type, some restructuring events fall in a very close time window
  - We consider them as one episode (Reinhart and Trebesch 2016, Farah-Yacoub et al. 2021)
  - This transformation – based on a (mechanical) rule of 18 months – helps us avoid overestimating inter-creditor coordination
    - Results are robust to a 24 months rule
  - Aggregation at episode level using the volumes of debt involved as weights
- **Bundling restructuring episodes into debt relief games**
  - Consider other creditor's actions: do other creditors provide debt relief in a close time window?
  - We use a (mechanical) rule of 24 months between restructurings by different creditors
    - Results are robust to a 24 months rule

# Data transformation: defining a debt relief game



From 6 events to 5 episodes to 3 games



# Data summary

Creditor	Full sample		1980 - 1999		2000 - 2019	
Paris Club	nb	share	nb	share	nb	share
Total number of episodes	338	100%	202	100%	121	100%
Total number of episodes as a follower	41	12%	21	10%	20	17%
Total number of episodes as a 1st mover	297	88%	181	90%	101	83%
Private sector	nb	share	nb	share	nb	share
Total number of episodes	152	100%	115	100%	37	100%
Total number of episodes as a follower	65	43%	53	46%	12	32%
Total number of episodes as a 1st mover	87	57%	62	54%	25	68%
China	nb	share	nb	share	nb	share
Total number of episodes	163	100%	0	-	163	100%
Total number of episodes as a follower	26	16%	0	-	26	16%
Total number of episodes as a 1st mover	137	84%	0	-	137	84%

- From default events to default episodes

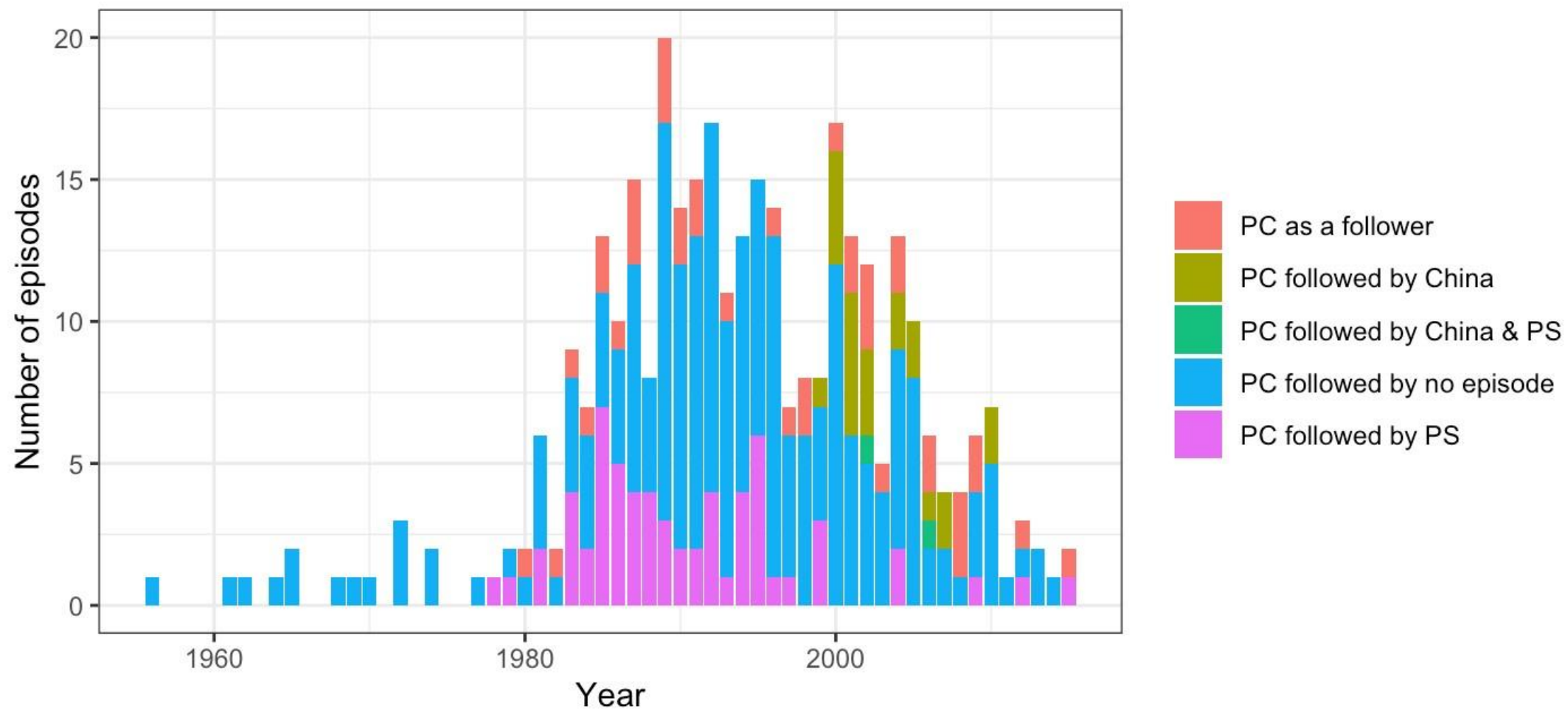
- For the PC: 425 events turn into 338 episodes
- For the PS: 198 events turn into 152 episodes
- For China: 208 events turn into 163 episodes

- From default episodes to debt relief games

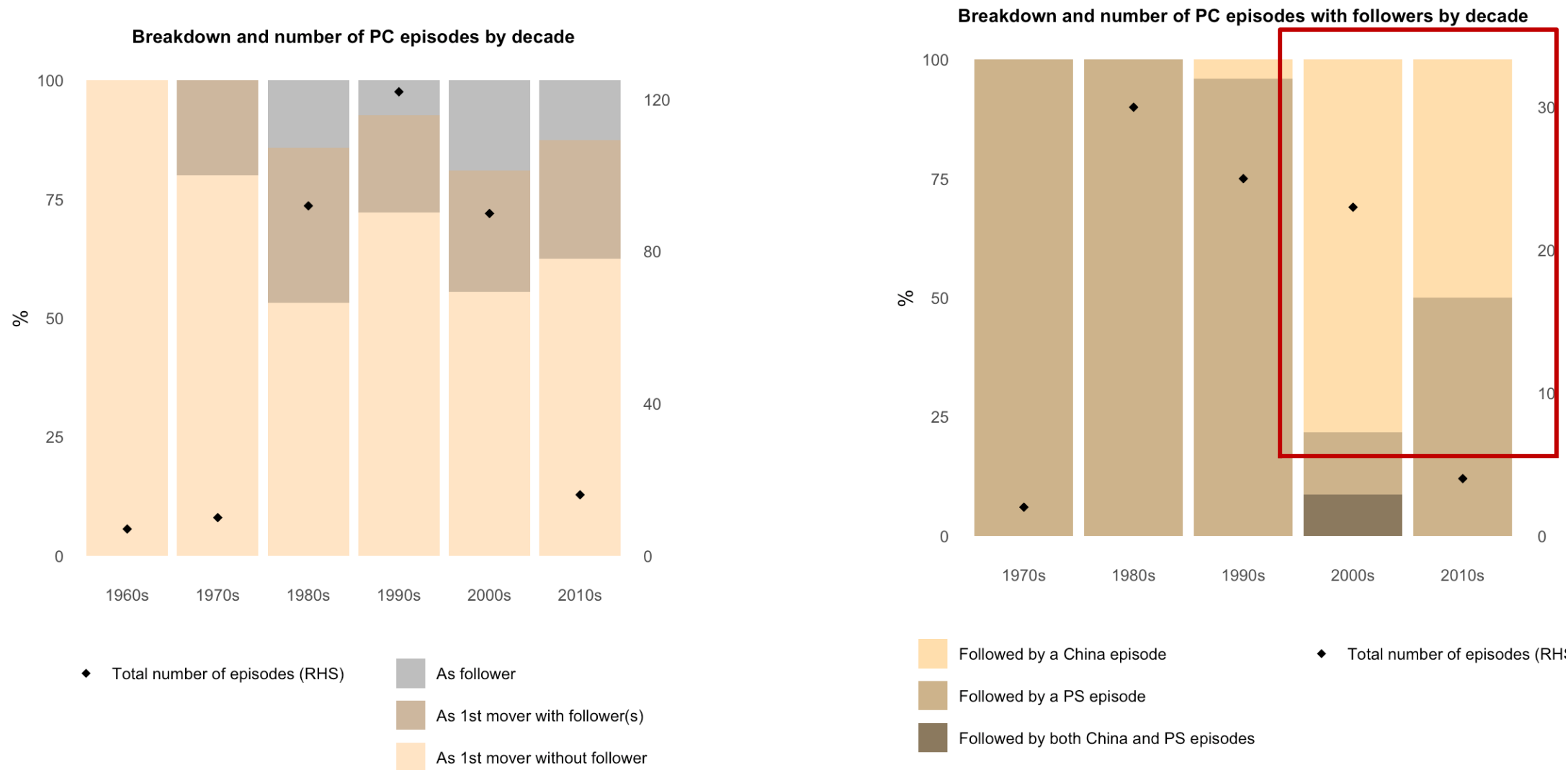
- 521 games out of 653 episodes

How do different creditors play debt relief games?  
Preliminary evidence

# Paris Club acting overtime



Successful coordination saw the Paris Club acting mostly as a first mover with different followers over time



# How long it takes to achieve coordination?

		Full sample	Post-2000
Leader	Follower	Avg duration (in months)	
PC	None	0,0	0,0
	PS	9,9	10,3
	China	10,5	10,5
	<b>More than one</b>	<b>10,4</b>	<b>11,3</b>
PS	None	0,0	0,0
	PC	10,2	7,6
	China	17,3	17,3
	<b>More than one</b>	<b>10,9</b>	<b>10,5</b>
China	None	0,0	0,0
	PS	9,5	9,5
	PC	12,1	12,1
	<b>More than one</b>	<b>11,8</b>	<b>11,8</b>

# Longer coordination time does not buy more debt relief

	Full sample	Post-2000
	Correlation duration & NPV haircut in %	
Overall correlation	0,11	-0,23
	Correlation duration & NPV haircut in % of GDP	
Overall correlation	-0,03	0,03

# Restructuring terms in debt relief games: Competition vs. emulation

Debt treated to GDP	Full sample			2000 - 2019		
1st mover / follower	PC	PS	China	PC	PS	China
PC	-	(0.11)	(0.07)	-	(0.06)	(0.11)
PS	(0.20)	-	(0.07)	(0.21)	-	(0.17)
China	(0.04)	(0.03)	-	(0.04)	(0.03)	-

Principal haircut to GDP	Full sample			2000 - 2019		
1st mover / follower	PC	PS	China	PC	PS	China
PC	-	0.33	0.11	-	0.53	0.00
PS	0.04	-	(0.01)	(0.02)	-	(0.09)
China	0.16	-	-	0.16	-	-

- Competition for the debt perimeter: the more debt the leader treats, the less followers treat
- Emulation among creditors in providing nominal value reduction:
  - The larger face value reduction by Paris Club, the larger subsequent face value reduction from private creditors and China
  - Larger China's effort when leading is followed by stronger debt relief from the Paris Club

# Restructuring terms in debt relief games: Competition vs. emulation

NPV haircut in %				
Full sample				
	PC	PS	China	
PC	-	0,73		-
PS	0,78	-		-
China	-	-		-
2000-2019				
	PC	PS	China	
PC	-	0,997		-
PS	0,672	-		-
China	-	-		-

- Strong emulation among western creditors in providing NPV relief (as CoT requires)
  - Correlation is really tight in the more recent period



# Coordination and global economic conditions

World GDP growth buckets	Nb of coordinated games	Nb of uncoordinated games	Ratio
0-30% lowest world growth	43	135	0,32
30-70% mid world growth	56	155	0,36
70-100% max world growth	31	96	0,32

World GDP growth buckets	Nb of games	Duration (in months)	Debt treated / GDP	NPV haircut in %	NPV haircut in % of GDP
	#	Average	Average	average	average
0-30% lowest world growth	43	10,2	22,1	54,8	8,3
30-70% mid world growth	56	10,0	22,3	60,3	9,2
70-100% max world growth	31	12,5	26,1	51,1	17,3

World GDP growth buckets	Correlation duration-debt treated	Correlation duration-npv haircut	Correlation duration-npv haircut (% of GDP)
0-30% lowest world growth	0,16	0,26	0,01
30-70% mid world growth	0,19	-0,11	-0,12
70-100% max world growth	-0,09	0,19	-0,07

# Growing out of debt?

- Successful coordination may require lengthier negotiations, which could dent growth prospects
- But by delivering lower debt levels for a sustained period, successful coordination may make investment easier, pushing up long-run growth
- We explore the link between coordination and macro dynamics in debtor countries

$$Y_{i(t,t+4)} = c + \beta_C \cdot \textit{Coordinated Relief}_{it-1} + \beta_U \cdot \textit{Uncoordinated Relief}_{it-1} + \beta_Z Z_{i,t-1} + \partial_i + \theta_t + \varepsilon_{it}.$$

where

$Y_{i(t,t+3)}$  captures 4-year cumulative real GDP growth, change in debt stocks, fiscal balance, current account balance

$Z_{i,t-1}$  are control variables

$\partial_i$  and  $\theta_t$  are country and year fixed effects

$\beta_C$  and  $\beta_U$  are the coefficients of interest - coordination/non-coordinated can be measured using dummies or continuous variable ( today, size of debt treated)

# Growing out of debt?

## Full Sample

Table 2:

	<i>Dependent variable:</i>			
	wb_g4 (1)	weo_hpdd_debt4 (2)	weo_pfmh_balance4 (3)	wb_ca4 (4)
lag(debt_coordination)	0.051 (0.046)	−0.495*** (0.086)	0.170*** (0.042)	0.135 (0.088)
lag(debt_no_coordination)	0.028 (0.052)	−0.342*** (0.101)	0.115* (0.063)	0.068 (0.093)
lag(WB_capita)	−0.004*** (0.0002)	−0.0002 (0.0004)	−0.001*** (0.0002)	0.001*** (0.0004)
lag(wb_world_g)	0.062 (0.163)	0.573* (0.337)	0.268 (0.185)	−0.315 (0.358)
lag(us10Y)	−1.524*** (0.089)	1.484*** (0.187)	−0.217* (0.117)	0.495*** (0.185)
Observations	4,787	3,931	3,093	3,416
R <sup>2</sup>	0.142	0.031	0.014	0.004
Adjusted R <sup>2</sup>	0.122	0.003	−0.022	−0.029
F Statistic	154.577*** (df = 5; 4676)	24.119*** (df = 5; 3822)	8.724*** (df = 5; 2982)	2.629** (df = 5; 3307)

Note:

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

# Growing out of debt?

Post-2000 sample

Table 1:

	<i>Dependent variable:</i>			
	wb-g4	weo.hpdd_debt4	weo.pfmh_balance4	wb_ca4
	(1)	(2)	(3)	(4)
lag(debt_coordination)	0.155*** (0.044)	-0.246*** (0.075)	0.195*** (0.049)	0.011 (0.098)
lag(debt_no_coordination)	0.182** (0.076)	-0.359*** (0.130)	0.223*** (0.085)	0.198 (0.151)
lag(WB_capita)	-0.002*** (0.0002)	-0.001** (0.0003)	-0.001*** (0.0002)	0.0005 (0.0003)
lag(wb_world_g)	-0.320 (0.210)	-0.398 (0.361)	0.299 (0.235)	-0.331 (0.421)
Observations	1,852	1,714	1,801	1,664
R <sup>2</sup>	0.084	0.014	0.026	0.003
Adjusted R <sup>2</sup>	0.026	-0.051	-0.037	-0.065
F Statistic	40.046*** (df = 4; 1741)	5.790*** (df = 4; 1606)	11.318*** (df = 4; 1691)	1.084 (df = 4; 1557)

Note:

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

# Likelier when Paris Club leads (post-2000 sample)

Table 4:

	<i>Dependent variable:</i>			
	wb_g4 (1)	weo_hpdd-debt4 (2)	weo_pfmh_balance4 (3)	wb_ca4 (4)
lag(debt_PC_leader_coordinated)	0.135*** (0.044)	-0.164** (0.078)	0.149*** (0.050)	0.033 (0.105)
lag(debt_PC_leader_uncoordinated)	0.356*** (0.122)	-0.219 (0.214)	0.217 (0.140)	0.204 (0.265)
lag(debt_PS_leader_coordinated)	0.044 (0.199)	-0.450 (0.349)	0.426* (0.223)	0.022 (0.405)
lag(debt_PS_leader_uncoordinated)	0.056 (0.094)	-0.468*** (0.167)	0.256** (0.105)	0.151 (0.189)
lag(debt_China_leader_coordinated)	0.174 (0.190)	-1.376*** (0.334)	0.381* (0.213)	-0.243 (0.382)
lag(debt_China_leader_uncoordinated)	0.416 (0.409)	0.069 (0.719)	-0.358 (0.459)	1.085 (0.827)
lag(WB_capita)	-0.001*** (0.0002)	-0.001*** (0.0003)	-0.0003* (0.0002)	0.0004 (0.0004)
lag(wb_world_g)	-1.001*** (0.212)	-0.226 (0.376)	-0.331 (0.239)	-0.265 (0.442)
lag(us10Y)	2.760*** (0.248)	-1.159** (0.463)	2.689*** (0.284)	-0.396 (0.539)
Observations	1,852	1,714	1,801	1,664
R <sup>2</sup>	0.149	0.027	0.078	0.004
Adjusted R <sup>2</sup>	0.092	-0.041	0.016	-0.067
F Statistic	33.738*** (df = 9; 1736)	4.903*** (df = 9; 1601)	15.833*** (df = 9; 1686)	0.735 (df = 9; 1552)

Note:

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

# Likelier when the framework for providing relief is clear

Table 4:

	<i>Dependent variable:</i>			
	wb_g4 (1)	weo_hpdd_debt4 (2)	weo_pfmh_balance4 (3)	wb_ca4 (4)
lag(debt_coordination_hipc)	0.150*** (0.048)	−0.162* (0.084)	0.131** (0.054)	0.048 (0.114)
lag(debt_coordination_non_hipc)	0.133 (0.131)	−0.183 (0.230)	0.392*** (0.146)	−0.006 (0.264)
lag(debt_no_coordination_hipc)	0.501*** (0.171)	0.256 (0.301)	0.056 (0.197)	0.225 (0.385)
lag(debt_no_coordination_non_hipc)	0.095 (0.085)	−0.425*** (0.151)	0.251*** (0.095)	0.235 (0.170)
lag(d_hipc)	−2.158 (2.128)	−9.901*** (3.748)	1.875 (2.409)	−3.681 (4.718)
lag(WB_capita)	−0.001*** (0.0002)	−0.001*** (0.0003)	−0.0003* (0.0002)	0.0004 (0.0004)
lag(wb_world_g)	−1.023*** (0.212)	−0.211 (0.377)	−0.343 (0.240)	−0.255 (0.442)
lag(us10Y)	2.811*** (0.249)	−1.050** (0.465)	2.671*** (0.285)	−0.358 (0.540)
Observations	1,852	1,714	1,801	1,664
R <sup>2</sup>	0.149	0.023	0.078	0.004
Adjusted R <sup>2</sup>	0.093	−0.045	0.016	−0.067
F Statistic	37.995*** (df = 8; 1737)	4.703*** (df = 8; 1602)	17.725*** (df = 8; 1687)	0.717 (df = 8; 1553)

Note:

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

# Main takeaways

- How do actors play debt relief games?
  - Successful coordination most often led by Paris Club
  - Lengthier coordination does not buy more relief
  - Evidence of coordination of private lenders with the Paris Club but not with China
    - Instances in which the private sector treats more debt are followed by larger debt relief by the Paris Club, but not by China. Post-2000, PC and private sector NPV relief tightly linked
  - **China provides relief following the Paris Club, even if it often restructures alone**
    - China treats more debt when acting alone
    - Paris Club and China provide more principal value reduction when the other party does it
- **Coordination matters**
  - Clear and adequately-designed coordination and relief mechanisms (such as the HIPC Initiative) can help lift growth and substantially dent debt in borrowing countries

# Next steps

- **A deeper look at the drivers of coordination?**

In particular, how to engage private creditors?

- **A richer and more rigorous econometric analysis of debtors' growth perspectives and its channels**

Local projection methods

- **The dynamics between debt restructuring and financing**

To examine the debt composition of debtor countries

- **Any other players in the game?**

To control for the size and type of IMF programmes



# References

- Asonuma, T and C Trebesch (2016): “Sovereign debt restructurings: preemptive or post-default”, *Journal of the European Economic Association*, 14, pp 175–214.
- Buchheit, L and M Gulati (2023): “Enforcing comparable treatment in sovereign debt workouts”, *Capital Markets Law Journal*, vol.18(1), January.
- Bon, G and G Cheng (2020): “China’s debt relief actions overseas and macroeconomic implications”. *EconomiX Working Papers 2020-27*, University of Paris Nanterre, EconomiX.
- Cheng, G, J Díaz-Cassou and A Erce (2018): “Official debt restructurings and development”, *World Development*, vol 111, no C, pp 181–95.
- Farah-Yacoub, J, C Graf von Luckner, and C M Reinhart (2021): “The Eternal External Debt Crisis: A Long View”, unpublished manuscript, World Bank, Washington, DC.
- Josselin, D (2009): “Regime interplay in public-private governance: taking stock of the relationship between the Paris Club and private creditors between 1982 and 2005”, *Global Governance*, 15.
- Rieffel, L (2003): “Restructuring sovereign debt: The case for ad hoc machinery”, *Brookings Institution Press*, Washington, DC .
- Rivetti, D (2022): “Achieving comparability of treatment under the G20’s Common Framework”, *Equitable, Growth, Finance and Institutions Notes*, World Bank.