Ethnic cleavages, institutions and the duration of economic slumps

Richard Bluhm[1,2] Kaj Thomsson[1]

[1]Maastricht University
[2]UNU-MERIT

25 Years UNU-MERIT

Why do economic declines in some countries last so much longer than in others?

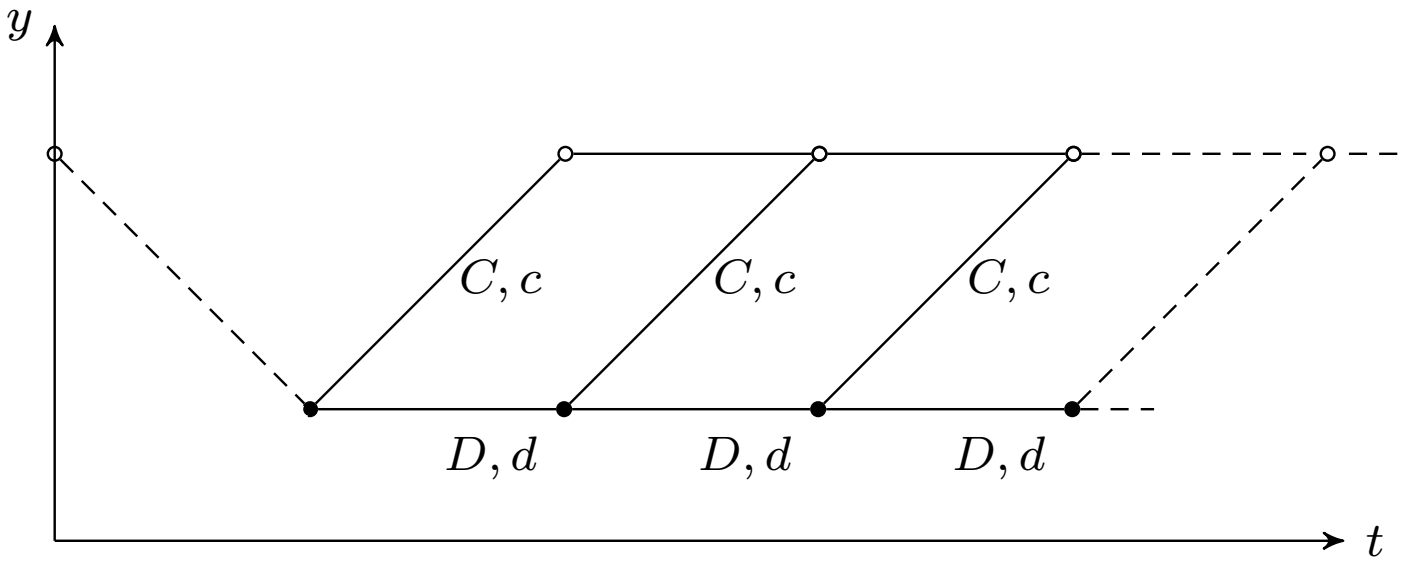
Contribution

- Paper *i)* provides a theory of delayed cooperation during slumps and *ii)* tests the implications of this theory.
- In earlier work, we outline the econometric identification of the duration of the decline phase and show that the duration of declines varies with ethnic heterogeneity and executive constraints (Bluhm et al. 2014).
- Ethnic heterogeneity often found detrimental to growth (Easterly & Levine 1997). Ethnic groups could be engaged in 'war of attrition' or be unable to undertake reform (Alesina & Drazen 1991, Fernandez & Rodrik 1991, Spoalore 2004).
- We propose a different mechanism that links ethnic heterogeneity and the powers of the political executive to the failure to agree on a policy response to the shock.

Intuition behind the model

- An exogenous slump occurs, ethnic groups in the executive need to agree on a policy and economy recovers immediately when they do. It's a cooperation game.
- However, slump can hit groups unequally (post-recovery outcome is uncertain).
- Political institutions are modeled as constraints on how much one group can expropriate from the other (e.g. Besley and Persson, 2011).
- 'Winner-takes-all' effect: if one group becomes too weak, the other group takes the remainder.
- "Loosing" means political (or even physical) extinction.
- Groups that are politically relevant today can extract concessions by delaying cooperation.

A sketch



Cooperating in period t when the other group cooperates in period t:

$$v_j^t(C, c) = \frac{1}{1-\delta}\left\{(1-2p^t)\mathbb{E}[g(w_j)|w_j \in \mathcal{A}] + p^t(g(0)+g(1))\right\}$$

Cooperating in period $t+1$ when the other group cooperates in period t:

$$v_j^t(D, c) = g((1-\Delta)y_j) + \frac{\delta}{1-\delta}\left\{(1-2p^{t+1})\mathbb{E}[g(w_j)|w_j \in \mathcal{A}] + p^{t+1}(g(0)+g(1))\right\}$$

Theoretical results

1. The welfare maximizing outcome involves no delay
2. There exist parameter values, such that all non-cooperative equilibria involve delay.
3. Stronger constraints on the executive shorten the expected time to recovery.
4. A decrease in (political) concentration makes delay more likely (under some parameter restrictions).
5. An increase in the number of groups makes delay more likely.

Data and empirical approach

- Dependent variable is the (log) duration of declines $\equiv \ln \tilde{t}$ (years) from Bluhm et al. (2014). We have 58 episodes.
- Executive constraints ($XCONST_0$) from Polity IV data proxy for model parameter c. Scaled 1 (lowest) to 7 (highest).
- *Ethnologue data* (Desmet et al. 2012) and *Ethnic Power Relations* (EPR) data from Wimmer et al. (2009) for diversity.
  - Fractionalization: $ELF_i = 100 \times \left[1 - \sum_{j=1}^{J} \left(\frac{n_{ij}}{N_i}\right)^2\right]$
  - Polarization: $POL_i = 100 \times 4 \sum_{j=1}^{J} \left(\frac{n_{ij}}{N_i}\right)^2 \left(1 - \frac{n_{ij}}{N_i}\right)$
  - Asymmetries: $ELA_i = 100 \times \frac{N_i}{N_i - 1} \left[\sum_{j=1}^{J} \left(\frac{n_{ij}}{N_i}\right)^2 - \frac{1}{N_i}\right]$
- Aproach: Examine partial correlations with duration models ensuring temporal exogeneity; no claim of causality.

Baseline predictions

Variables	Dependent Variable: $\ln \tilde{t}$					
	(1)	(2)	(3)	(4)	(5)	(6)
	Ethnologue			*Ethnic Power Relations*		
Executive Constraints ($XCONST_0$)	-0.187***	-0.291***	-0.171***	-0.187***	-0.262***	-0.170**
	(0.063)	(0.092)	(0.064)	(0.067)	(0.085)	(0.067)
Fractionalization (ELF)	0.017***	0.019***	0.023***			
	(0.004)	(0.004)	(0.006)			
Fractionalization (ELF_0)				0.020***	0.023***	0.025***
				(0.007)	(0.007)	(0.007)
Interaction ($XCONST_0 \times ELF15$)		-0.004**				
		(0.002)				
Polarization (POL)			-0.011			
			(0.007)			
Interaction ($XCONST_0 \times ELF_0$)					-0.004*	
					(0.002)	
Polarization (POL_0)						0.012
						(0.009)
	Control sets					
GDP per capita	Yes	Yes	Yes	Yes	Yes	Yes
	Summary stats					
Exits	47	47	47	47	47	47
Spells	57	57	57	57	57	57
Years of Decline	346	346	346	346	346	346
Pseudo-R^2	0.149	0.173	0.161	0.119	0.134	0.127

All ethno-political variables based on EPR, version 3.01 and EPR-ETH version 2. Constant not shown. SEs clustered at the country level. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Extended predictions

	Dependent Variable: $\ln \tilde{t}$					
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Executive Constraints ($XCONST_0$)	-0.225***	-0.241***	-0.215***	-0.179***	-0.210***	-0.200***
	(0.070)	(0.063)	(0.065)	(0.066)	(0.070)	(0.073)
Number of Groups ($GROUPS_0$)	-0.008			-0.031**		
	(0.018)			(0.014)		
Included Groups ($EGIPGRPS_0$)		0.426***			0.290**	0.300***
		(0.095)			(0.124)	(0.111)
Excluded Groups ($EXCLGRPS_0$)		-0.012			-0.021*	-0.014
		(0.013)			(0.012)	(0.012)
Dominant Pop. ($DOMPOP_0$)			-0.702*			
			(0.361)			
Monopoly Pop. ($MONPOP_0$)			-1.140**			
			(0.484)			
Fractionalization (ELF_0)				0.022***	0.013	
				(0.007)	(0.009)	
Assymetries (ELA_0)						-0.013**
						(0.006)
Control sets						
GDP per capita	Yes	Yes	Yes	Yes	Yes	Yes
Summary stats						
Exits	47	47	47	47	47	43
Spells	57	57	57	57	57	53
Years of Decline	346	346	346	346	346	334
Pseudo-R^2	0.064	0.133	0.103	0.129	0.154	0.166

All ethno-political variables based on EPR, version 3.01 and EPR-ETH version 2. Constant not shown. SEs clustered at the country level. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Robustness

	Dependent Variable: $\ln \tilde{t}$					
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Executive Constraints ($XCONST_0$)	-0.245***	-0.188***	-0.211***	-0.146**	-0.181***	-0.128**
	(0.079)	(0.055)	(0.077)	(0.060)	(0.066)	(0.053)
Fractionalization (ELF)	0.020***	0.019***				
	(0.004)	(0.003)				
Fractionalization (ELF_0)			0.017**	0.016***		
			(0.007)	(0.006)		
Interaction ($XCONST_0 \times ELF15$)	-0.003**	-0.003***				
	(0.001)	(0.001)				
Interaction ($XCONST_0 \times ELF_0$)			-0.003	-0.003		
			(0.002)	(0.002)		
Included Groups ($EGIPGRPS_0$)					0.298***	0.259***
					(0.097)	(0.086)
Excluded Groups ($EXCLGRPS_0$)					0.024*	0.062***
					(0.013)	(0.021)
Control sets						
GDP per capita	Yes	Yes	Yes	Yes	Yes	Yes
Regional dummies	Yes	Yes	Yes	Yes	Yes	Yes
Decade dummies	No	Yes	No	Yes	No	Yes
Summary stats						
Exits	47	47	47	47	47	47
Spells	57	57	57	57	57	57
Years of Decline	346	346	346	346	346	346
Pseudo-R^2	0.275	0.391	0.215	0.317	0.207	0.302

All ethno-political variables based on EPR, version 3.01 and EPR-ETH version 2. Constant not shown. SEs clustered at the country level. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Conluding remarks

- Outcomes with delay occur in equilibrium but are not the social optimum. Groups are not able to commit to compensating the losers; that is, give back their potential post-recovery gains. No such enforceable contracts.
- Results are particularly relevant for understanding declines in Africa where political divisions are mostly ethnic and power is shared (Francois et al. 2014, forthcoming ECTA).
- Effective coordination and policy responses to slumps are difficult with weak institutions and group heterogeneity.
- Stronger, more cohesive, institutions help to resolve these issues, at any level of heterogeneity.

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