

Conflict and Cooperation: Democratic Peace

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Motivation

- ▶ Thomas Paine ([3] p. 169): "What inducement has the farmer, while following the plough, to lay aside his peaceful pursuit, and go to war with the farmer of another country?"
- ▶ Immanuel Kant ([1], p. 122): if "the consent of the subjects is required to determine whether there shall be war or not, nothing is more natural than that they should weigh the matter well, before undertaking such a bad business"
- ▶ President George W. Bush's second inaugural address: We "seek and support the growth of democratic movements and institutions in every nation and culture."
- ▶ President Clinton, in his 1994 State of the Union address: "the best strategy to ensure our security and to build a durable peace is to support the advance of democracy elsewhere. Democracies do not attack each other."
- ▶ A key tenet of the "neoconservatives". Kaplan and Kristol [2] contend that the "strategic value of democracy is reflected in a truth of international politics: Democracies rarely, if ever, wage war against one another".

Empirical Evidence

- ▶ Main point: Democracies rarely fight each other, though they may be aggressive towards non-democracies.
- ▶ Levy (1989) claims that “This absence of war between democracies comes as close as anything we have to an empirical law in international relations.”

Conflict Game

		Country j	
		H	D
Country i	H	$-c$	$\mu - c$
	D	$-d$	0

- ▶ Citizens and leader have private costs drawn from distribution F on $[0, \bar{c}]$. F is increasing and concave
- ▶ $c < \mu$: Player is a *hawkish* greedy type with a dominant strategy to be hawkish. (Fraction $F(\mu)$)
- ▶ $c > d$: Player is a *dovish* pacifist type with a dominant strategy to be dovish. (Fraction $1 - F(d)$)
- ▶ $\mu < c < d$: Player is a *coordination* type who wants to coordinate with the opponent. The median voter is a coordination type by:
- ▶ **Assumption 1:**

$$0 < \mu < c^{med} < d < \bar{c}$$

Recap: Strategic Complementarity

- ▶ Because $d > \mu$, each player's incentive to be aggressive is increasing in the other player's aggression and action are *strategic complements*:

$$-c - (-d) > \mu - c.$$

- ▶ Hence, reaction functions are increasing in the probability that the opponent is aggressive.
- ▶ The strategic complementarity assumption captures the idea of reciprocal fear of surprise attack: as the hawks always attack, types who are “almost” hawks also attack; then types who are “almost” almost-hawks attack etc. In fact under our assumption that F is concave, this process pins down a unique equilibrium.

Model: Timing

- ▶ Time 0: Leaders and citizens private costs are privately drawn
- ▶ Time 1: Leaders choose whether to play H or D .
- ▶ Time 2: Citizens decide whether to oust the leader or not.
- ▶ In country i , leader i needs support σ_i^* to survive. If he survives, he receives benefit R where $0 < R < \mu$. (We will use this critical level of support to classify political institutions.)

Model: Support and Regimes

Assumption 2: Greed is more prevalent than pacifism:

$$1 - F(d) < F(\mu)$$

Given Assumption 1, if the coordination types vote with one of the other two groups, the leader has at least 50% support. This leads to the following classification of regimes:

- ▶ $\sigma_i^* < 1 - F(d)$: The leader can survive even if only pacifists support him. This means he can always survive and the country is an *dictatorship*.
- ▶ $1 - F(d) < \sigma_i^* < F(\mu)$: The leader cannot survive even if only pacifists support him but can survive if the greedy types support him. In this case the country is a *limited democracy*.
- ▶ $F(\mu) < \sigma_i^* \leq 1/2$: The leader can survive if and only if the median voter supports him. In this case, the country is a *full democracy*. Neville Chamberlain had to resign after his appeasement of Hitler, but Margaret Thatcher won re-election after the successful Falklands War.

Conflict Game for Different Regime Types

Dictatorship

		Country j	
		H	D
Country i	H	$-c$	$\mu - c$
	D	$-d$	0

Limited Democracy

		Country j	
		H	D
Country i	H	$R - c$	$R + \mu - c$
	D	$-d$	R

- ▶ The leader of a *limited democracy* has an extra “*hawkish bias*” compared to an autocrat, as he does not survive if the action profile is DH . During World War I, the German leaders believed a peace agreement would lead to their demise (they were right: Kaiser Wilhelm left for permanent exile in the Netherlands, and Ludendorff fled to Sweden).

Conflict Game for Different Regime Types

		<i>Limited Democracy</i>	
		Country j	
Country i	H	H	D
	D	$R - c$	$R + \mu - c$
		$-d$	R
		<i>Full Democracy</i>	
		Country j	
Country i	H	H	D
	D	$R - c$	$\mu - c$
		$-d$	R

- ▶ The leader of a *full democracy* has extra “*dovish bias*” compared to a limited democracy as he does not survive is the action profile is HD . This is embodiment of the democratic peace idea in our model.

Leader i 's optimal decision depends on his own cost type, his own regime type, and the probability p_j that leader j plays H .

- ▶ If country i is a dictatorship, leader i prefers H if

$$-c_i + (1 - p_j)\mu \geq -dp_j. \quad (1)$$

The leader of country i must follow a cutoff strategy, playing H if and only if $c_i \leq \mu + (d - \mu)p_j$. Therefore, the probability that leader i chooses H is $p_i = h(p_j, Di)$, where

$$h(p_j, Di) \equiv F(\mu + p_j(d - \mu)). \quad (2)$$

The function $h(\cdot, Di)$ can be thought of as a dictator's best response function.

- ▶ If country i is a limited democracy, leader i prefers A if

$$R - c_i + (1 - p_j)\mu \geq -p_jd + (1 - p_j)R, \quad (3)$$

which is true if and only if $c_i \leq \mu + p_j(d - \mu) + p_jR$.

Therefore, the probability that leader i chooses A is $p_i = h(p_j, Li)$, where

$$h(p_j, Li) \equiv F(\mu + p_j(d - \mu) + p_jR). \quad (4)$$

This is the best response function for the leader of a limited

- If country i is a full democracy, leader i prefers H if

$$p_j R + (1 - p_j)\mu - c_i \geq -p_j d + (1 - p_j)R, \quad (5)$$

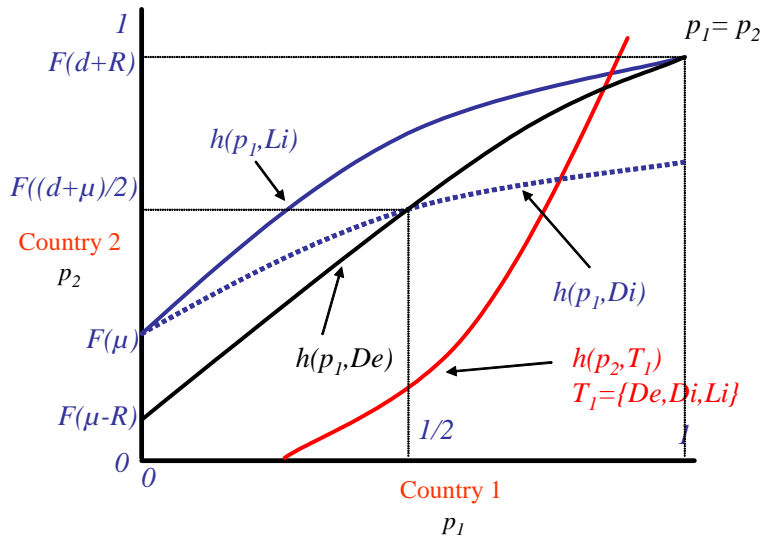
which is true if and only if

$c_i \leq \mu + p_j (d - \mu) + p_j R - (1 - p_j) R$. Therefore, the probability that leader i chooses H is $p_i = h(p_j, De)$, where

$$h(p_j, De) \equiv F(\mu + p_j (d - \mu) + p_j R - (1 - p_j) R). \quad (6)$$

This is the best response function for the leader of a full democracy.

Figure 1



- ▶ **Proposition 1:** *Warlike Limited Democracy:* Replacing any other regime type in country i with a limited democracy increases the equilibrium probability of conflict, whatever the regime type in country j .
- ▶ **Proposition 2:** *Dyadic Democratic Peace:* If $c^{med} > (d + \mu)/2$, a dyad of full democracies is more peaceful than any other pair of regime types.
- ▶ **Proposition 3:** *Hawkish Democracies:* Suppose $c^{med} > (d + \mu)/2$ (so the dyadic democratic peace hypothesis holds). As country j changes from a full democracy to any other regime type $T' \in \{Di, Li\}$, the equilibrium probability of conflict increases more if country i is a full democracy than if it is any other regime type $T \in \{Di, Li\}$.

Empirical Results: Data

- ▶ We use the same data used by most studies of the democratic peace hypothesis to test our predictions.
- ▶ Correlates of War data documents inter-state conflict for around 190 countries from 1816-2000. This dataset has been modified so that for each country-year pair lists if they are in conflict and who initiated the conflict. Along with many studies, by a conflict, we use *militarized disputes* (MID) which includes not only wars but any deliberate, aggressive action such as the firing of a missile.
- ▶ Polity III data (Jaggers and Gurr (1996)) construct aggregate democracy and autocracy scores for countries using indices measuring competitiveness of political participation, competitiveness of process for electing chief executive, regulation of political participation, openness of executive recruitment and constraints on the chief executive. Each aggregate score ranges from 0 to 10. Oneal and Russett (1997) and many other combine the scores to generate a net democracy score ranging from -10 to +10.

Empirical Model

- ▶ Using a fixed effect logit model, we study the probability of a MID within each dyad. We use six dummies to identify six possible combinations of regime types. Countries with Polity scores between -10 to -4 are dictatorships, -3 to +3 are limited democracies and +4 to +10 are full democracies.
- ▶ We include a fixed effect defined at the dyad level to account for unobserved heterogeneity in the cross-section of dyads.
- ▶ The entire set of dummy variables cannot be separately identified from the constant term and one variable must be excluded from the estimation procedure. We exclude the dummy D_{LiLi} , so that the estimated coefficients on the remaining dummies order the partial effects of each regime pair relative to the limited democracy pair.
- ▶ We study the following: 1. Are the estimated parameters negative? 2. As the environment becomes more hostile, do democracies become more aggressive more quickly than other regime types? 3. Does the democratic peace hypothesis obtain? (Also, we perform various robustness checks.)

Examples

- ▶ Britain, France, Italy, Spain and Germany are limited democracies at key points in the nineteenth and early twentieth centuries. France is a limited democracy at the time of the Belgian War of Independence, and at the time of the Franco-Prussian War. France's successful support of Belgium does not result in the demise of King Louis-Philippe, but France's loss against Prussia forces Napoleon III from power.
- ▶ France and Mexico were both limited democracies when they fought the "Pastry War" 1838-1839, ostensibly over the looting of a French chef's shop, but more significantly over the repayment of outstanding debt. Eventually Mexico was forced to repay, which triggered a series of domestic crises that led to the overthrow of Mexico's President Bustamante. France's King Louis-Philippe remained in power.
- ▶ With the end of the Cold War, countries arising from the disintegration of Yugoslavia and the end of the Soviet Union such as Armenia, Croatia, Georgia, Russia and Yugoslavia satisfy our definitions of limited democracy during key

Empirical Model: Controls

We use standard controls from the empirical literature:

1. $MinDep = \min\{trade_1, trade_2\}$ where $trade_k$ is the dyadic flow of exports plus imports divided by country k 's GDP
2. $MajPower_t$: dummy variable set to 1 if at least one of the two countries is a major power at t
3. $Allies$: Dummy variable which is 1 if there is a treaty (nonaggression, neutrality) in the dyad
4. $LogCapRatio$: Log of the maximum to the minimum level of military capabilities (where this reflect military expenditure and manpower, population etc.)
5. $Contig.$: Dummy variable which is set at 1 if the two countries share borders
6. $SystSize_t$ number of countries at date t .

Table: Regression models—Baseline

Dependent Variable: Onset of a Militarized Dispute

Model	(1) BASELINE		(2)	
Panel a				
(r)1-1 D_{DiDi}	-0.58		-0.0027	-0.90
	[0.21]***	(<0.01)***	[0.0013]**	[0.18]**
D_{LiDi}	-0.54		-0.0030	-0.47
	[0.20]***	(<0.01)***	[0.0013]**	[0.19]**
D_{DeDi}	-0.57		-0.0033	-0.34
	[0.20]***	(<0.01)***	[0.0013]**	[0.19]*
D_{DeLi}	-0.70		-0.0044	-0.44
	[0.21]***	(<0.01)***	[0.0014]***	[0.20]**
D_{DeDe}	-1.38		-0.0071	-1.33
	[0.22]***		[0.0014]***	[0.23]**
Panel b				
(r)1-1 Alliance	-0.38		-0.0054	-0.06
	[0.12]***		[0.0016]***	[0.12]
MajPower	0.36		0.0030	1.84
	[0.28]		[0.0025]	[0.15]**
LogCapRatio	-0.01		0.0001	-0.13
	[0.07]		[0.0004]	[0.036]*
Contig.	-		-	2.27

Warlike Democracies

- ▶ We also find evidence that full democracies are hawkish in the sense of responding most aggressively to adverse changes in the environment.
- ▶ For example, using the estimates of a linear probability model, when a country changes to a democracy from a dictatorship, if it faces a democracy, the probability of a dispute decreases by 90%. But if it faces a dictatorship, the probability of conflict decreases by only 12%. Hence, a piecemeal intervention that creates a democracy in one country while leaving an opponent as a dictatorship does not significantly lower the incidence of dyadic disputes.

Democratic Peace and Fear: Conclusions

- ▶ As formulated by Paine and Kant, the democratic peace hypothesis states that democracy is good for peace, because wars are disadvantageous to the average citizen.
- ▶ But if wars are caused by fear and distrust, then our model finds a possibly non-linear relationship between democracy and peace.
- ▶ Our empirical analysis of militarized disputes in the nineteenth and twentieth centuries reveals that a dyad of two limited democracies is more likely to be involved in a dispute than any other dyad (including dictatorships). Echoing earlier results, we also find that a dyad of two full democracies is the least likely to experience a dispute. Finally, we find that as the environment becomes more hostile, democracies become more aggressive faster than other regime types. These three empirical facts are consistent with our simple model.

Conclusions

- ▶ Many countries in the Middle East are classified as dictatorships, or vacillate between dictatorship and limited democracy. President George W. Bush adopted a “forward strategy of freedom in the Middle East” because “the advance of freedom leads to peace”. Unfortunately, our research suggests that a *limited* advance of freedom might lead to more war. Worse, if the average citizen in the democracy is sufficiently fearful, then even transforming a country into an *ideal* democracy may not lead to peace if other countries are not so transformed.
- ▶ Our simple theory implies that democracies may become particularly aggressive when placed in a hostile environment. Unfortunately, this also seems to be consistent with the data.
- ▶ This non-linear relationship between democracy and peace has complex policy implications: *Democratization carries promise but also risks.*

Democratic Peace and Greed: Political Bias (Jackson and Morelli)

- ▶ Two countries with wealth w_i $i = 1, 2$. If country i and j go to war, country i wins with probability $p_i(w_i, w_j) \equiv p_{ij}$ which is weakly increasing in w_i and weakly decreasing in w_j .
- ▶ War costs a fraction C of wealth. A winner gains a fraction G of the loser's wealth. Hence, country j 's payoff if it loses is

$$w_j(1 - C - G)$$

and if it wins is

$$w_j(1 - C) + w_i G.$$

- ▶ Assume $C + G \leq 1$.
- ▶ Pivotal decision maker in each country decides whether to go to war. He owns a fraction a_j of wealth w_j . *But he acquires a fraction a'_j of wealth of country i if he wins.* We add transfers later.

- Hence, agent j favors war iff

$$(1 - C) a_j w_j - (1 - p_{ji}) G a_j w_j + p_{ji} G a'_j w_i > a_j w_j$$

or

$$p_{ji} G a'_j w_i > [C + (1 - p_{ji}) G] a_j w_j. \quad (7)$$

Let *political bias* B_j be

$$B_j = a'_j / a_j$$

so (7) becomes

$$B_j p_{ji} G w_i > [C + (1 - p_{ji}) G] w_j. \quad (8)$$

Basic Result

Theorem

If neither country is biased so $B_i = B_j = 1$, then at most one country wishes to go to war.

Proof Country j wishes to go to war against country i iff

$$Gp_{ji}w_i > [C + (1 - p_{ji}) G] w_j$$

or

$$p_{ji} > \frac{Gw_j + Cw_j}{Gw_j + Gw_i}$$

Country i wishes to go to war against country j iff

$$\begin{aligned} Gw_j p_{ij} &> [C + (1 - p_{ij}) G] w_i \text{ or} \\ Gw_j (1 - p_{ji}) &> [C + p_{ji} G] w_i \end{aligned}$$

or

$$\frac{Gw_j - Cw_i}{Gw_j + Gw_i} > p_{ji}.$$

Combining, we get

$$\frac{Gw_j - Cw_i}{Gw_j + Gw_i} > \frac{Gw_j + Cw_j}{Gw_j + Gw_i}$$

but this cannot hold.

Unbiased Peace with Classical Contest Success Function

Suppose $p_{ji} \equiv \frac{w_j}{w_i + w_j}$ and that both countries are unbiased. Then neither country wants to go to war:

Recall country j favors war iff

$$\begin{aligned} G p_{ji} w_i &> [C + (1 - p_{ji}) G] w_j \text{ or} \\ \frac{G w_i w_j}{w_i + w_j} &> \left[C + \left(1 - \frac{w_j}{w_i + w_j} \right) G \right] w_j \text{ or} \\ \frac{G w_i}{w_i + w_j} &> \left[C + \frac{w_i}{w_i + w_j} G \right] \end{aligned}$$

which is impossible.

Democratic Peace and Greed: Audience Costs and War of Attrition (Fearon)

- ▶ Main idea: The leader of a democracy faces higher “audience” costs (e.g. loss of election) than a dictator, if he backs down during a conflict. For all leaders, the costs are higher, the longer the crisis has gone on.
- ▶ There is prize worth $v > 0$ to both players. At each $t \geq 0$, a state $i = 1, 2$ can decide whether to “escalate” (i.e. wait), “quit” or “attack”.
- ▶ If a state attacks, the two states get payoffs w_1 and w_2 , both negative.
- ▶ If a state quits, it gets payoff $-a_i t$ where $a_i > 0$.
- ▶ Pure strategy specifies a time t to quit or attack if the game teaches that time.

Complete Information

- ▶ w_1 and w_2 and everything else are common knowledge.
- ▶ Let T_i be defined by

$$a_i T_i = w_i.$$

and let

$$T_0 = \min\{T_1, T_2\}$$

and w.l.o.g. assume $T_0 = T_2$.

- ▶ Then, there is an equilibrium where player 2 quits immediately (and off-the-equilibrium path, he quits at every instant before T_0 and attacks after T_0) and player 1 escalates by to T_0 and then attacks (recall $w_i < 0$ $i = 1, 2$).

Incomplete Information

- ▶ w_i drawn from interval $[\underline{w}_i, 0]$ with c.d.f. F_i and continuous strictly positive density f_i and are private information.
- ▶ We find one equilibrium (Fearon uses refinement to pick it).
- ▶ A strategy maps from w_i into a time to and attack/quit if the game reaches that time. Let $Q_i(t)$ be probability player i quits by time t and $A_i(t)$ the probability he attacks by time t . Assume Q_i is differentiable.
- ▶ If player i attacks at time t , his payoff is

$$Q_j(t)v + (1 - Q_j(t))w_i$$

which is increasing in Q_j as $v > 0 > w_i$. Hence, player i will attack “at the end of the game”.

- ▶ We look for an equilibrium with a time T^* at which both players attack. Player i attacks at T^* iff $w_i \geq -a_i T^*$.

- ▶ If player i escalates up to some time t and then attacks iff $w_i \geq -a_i t$, player j 's payoff from escalating up to t and then quitting is

$$F_i(-a_i t)v + (1 - F_i(-a_i t)) \times (-a_j t). \quad (9)$$

- ▶ Let T_j^* solve (9) as an equality and let $T_0^* = \min\{T_1^*, T_2^*\}$. W.l.o.g. assume $T_0^* = T_2^*$.
- ▶ Equilibrium: If $w_i \geq -a_i T_0^*$, player i escalates up to time T_0^* and then attacks. For $w_i < -a_i T_0^*$, player i quits at some time $t < T_0^*$ so that

$$\begin{aligned} Q_1^*(t) &= \frac{a_2 t}{v + a_2 t} \\ Q_2^*(t) &= \frac{k_1 + a_1 t}{v + a_1 t} \end{aligned}$$

where $k_1 = F_2(-a_2 T_0^*)v + (1 - F_2(-a_2 T_0^*)) \cdot (-a_1 T_0^*) \geq 0$.

- ▶ Player i 's payoff from dropping out at t is

$$Q_j(t)v + (1 - Q_j(t))(-a_i t).$$

This should be constant over $[0, T_0^*]$ to make player i willing to quit at any time over the interval. Moreover, it should equal zero for player 2 and k_1 for player 1. This gives Q_i^* .

Democratic Peace and Audience Costs

- ▶ Probability that player i attacks is $1 - F_i(-a_i T_0^*)$. *The country with higher audience costs like a democracy is more likely to attack.* The country with lower audience costs is more likely to back down.
- ▶ If a_i increases there is a strategic effect that favors player i : player j is more likely to quit and this increases chance that player i gets v . There is direct effect that
- ▶ **Exercise:** Work out welfare effects at interim stage (i.e. for each type) as a_i increases.

Cheap Talk and Democratic Peace (Levy and Razin)

Over to Luciano!

- [1] KANT, I. (1795, 1903) *Perpetual Peace: A Philosophical Essay*, translated by M. Campbell Smith (London: Swan Sonnenschein & Co.).
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- [3] PAINE, T. (1985), *Rights of Man* (London: Viking Penguin Inc.).