Intervention and Peace

David K. Levine and Salvatore Modica

Intervention and Duration of Conflict

- success in battle often increases control over resources and weakens the opponent making further victories easier

- warfare is unstable – eventually one side gets lucky and wins

- empirically this happens relatively rapidly: First and Second World Wars, U.S. Civil War – lasted about five years

- by contrast with outside intervention warfare is often prolonged for decades: Vietnam War, Sudan, Angola, Lebanon

Simple Model of Bilateral Regional Conflict

two groups denoted by $j = 1, 2$ controlling land and other resources L in a particular region without significant geographical barriers

conflict takes place over time $t = 1, 2, \ldots$

resources of j at time t is $L_{jt} \geq 0$; units such that at most one unit can change hands in one period

institutional strength or *unit power* of j is $\gamma_j > 0$ makes it easier to prevail in conflict.

aggregate power of j is $\varphi(\gamma_j, L_{jt}) = \gamma_j L_{jt}$.

more resources = more power

$1 \geq p(\varphi_{jt}, \varphi_{kt}) \geq 0$

probability that j gains a unit of land from k the *conflict resolution function* $1 \geq p(\varphi_{jt}, \varphi_{kt}) \geq 0$ increasing in φ_{jt} decreasing in φ_{kt}

The Markov Process

state variable the land holding L_{jt} of j and with $L_{kt} = L - L_{jt}$

$p(\varphi(\gamma_j, L_{jt}), \varphi(\gamma_k, L_{kt}))$ gives rise to a birth-death process

as L_{jt} grows probability it continues to grow goes up

capture the basic instability of warfare

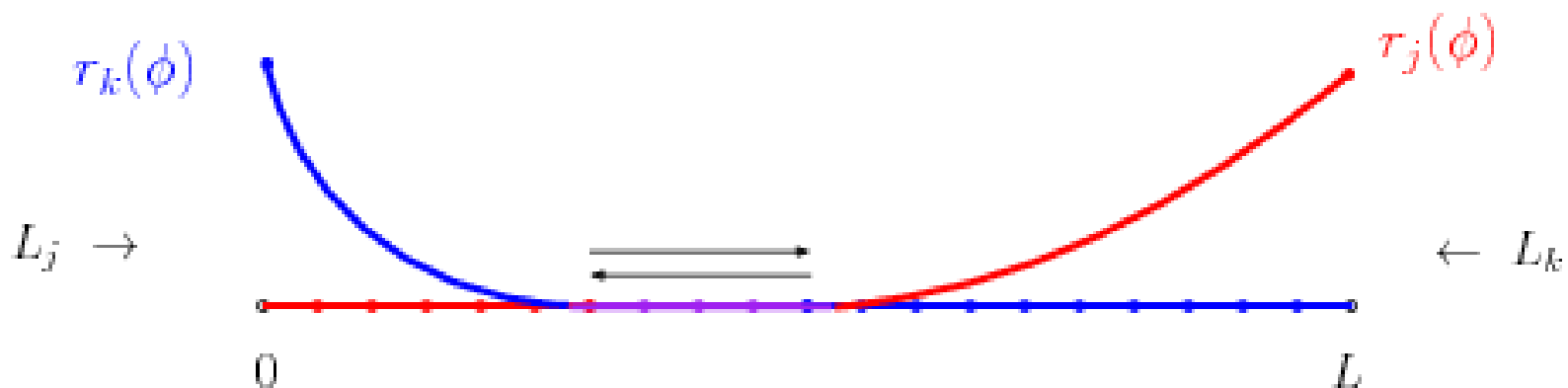*hegemony* = one side has all the resources

Resistance

chances of winning when heavily outnumbered $\epsilon > 0$ very low

$p(\varphi_{kt}, \varphi_{jt}) = p_0(\varphi_{kt}, \varphi_{jt})\epsilon^{r(\varphi_{jt}, \varphi_{kt})}$ where $r(\varphi_{jt}, \varphi_{kt}) \geq 0$ is *resistance* of j to losing land to k

Assumption: *resistance increases in own and decreases in opponent aggregate power.*

hegemonic resistance $r_j^h = r(\varphi(\gamma_j, L), 0)$, assumed positive

Assumption: *weaker society has no resistance*

Stochastic Stability and Hegemony

unique ergodic probability distribution μ_ϵ; as $\epsilon \to 0$ unique limit μ_0; places weight only on absorbing states for the process with $\epsilon = 0$

those absorbing states that have positive probability in the limit distribution μ_0 are called *stochastically stable:* observed "most of the time" when ϵ is small

hegemonies of $j = 1, 2$ absorbing

all the other states transient when $\epsilon = 0$: zero resistance to hegemony

empirically hegemony is common

- China, Egypt, Persia, Roman Empire, Caliphate, Ottoman Empire

but not ubiquitous

- Europe post Roman period, India
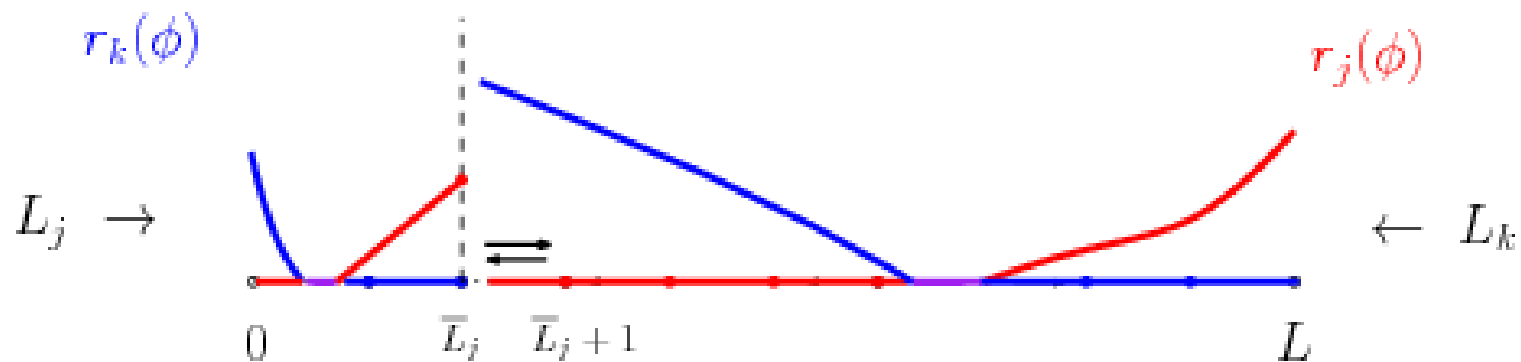- both appear to have involved substantial outside intervention

Intervention Thresholds

outside power or powers

$\overline{L}_j, \overline{L}_k$ intervention thresholds: if $L_{jt} \leq \overline{L}_j$ the outsiders reinforce j with a fixed amount of power φ_0

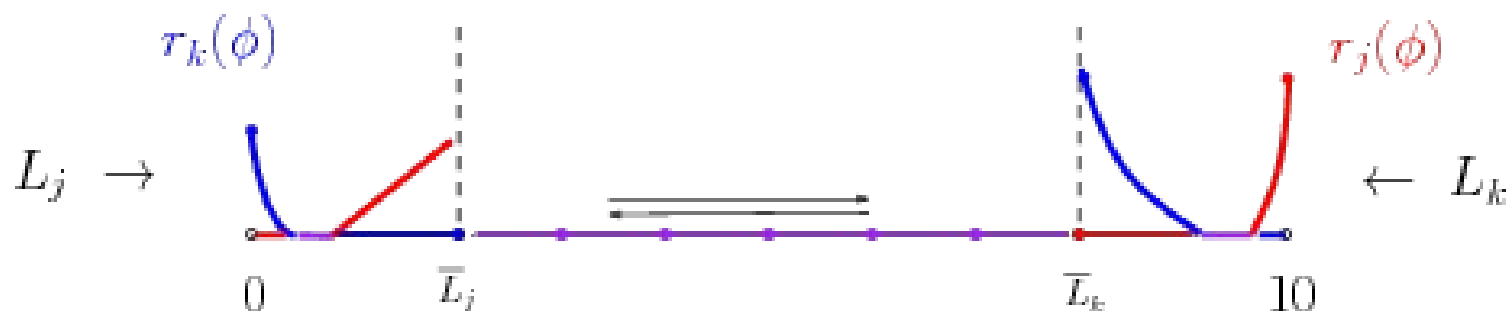combined power of j is $\phi_j(L_{jt})$

Weak Intervention and Hot Peace

1988-2001: Northern League in Afghanistan

these conflicts are long but not particularly bloody

Medium Intervention and Prolonged War
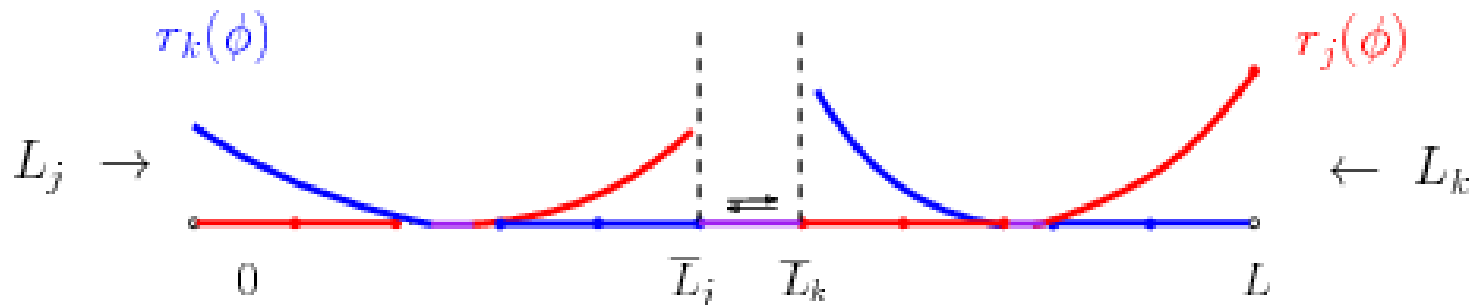

classical example: Vietnam

long and bloody

makes no sense from a humanitarian point of view

good for keeping the combatants weak: classical British balance of power view of continental Europe

one might argue that this is US policy in the Middle East

Strong Intervention and Hot Peace

classical example: Cold War Europe staring eye-to-eye across a border

again long but not especially bloody

Why Intervene?

- prevent hegemony that may be threatening: Britain and the balance of power on the continent

- extract economic rents: British Indian Empire?

- sell arms: seems more alleged than real

- extend military influence: Russia in Syria

- domestic popularity: Cameron and Hollande in Libya

- preserve trading partners: senseless – allow one side to win

- moral considerations: evidence is weak that this occurs

.

Single Intervenor

no, weak or medium intervention

- no intervention costless

- weak intervention: expensive (your side is very weak) cost 1

- medium intervention: cost $0 < c < 1$

benefits

- payoff to hegemony of either side is 0

- w benefit of prolonged war

- benefit of hot peace is $x < w$ (better to keep them fighting)

Hence - with one player choosing both the

row and column - that is whether to intervene on either or both sides

- the payoff matrix to intervention is given by

Balance of Power Game

	medium k	weak k	none
medium j	$w - 2c$		
weak j	$x - 1 - c$	$x - 2$	
none	$-c$	$x - 1$	0

not intervene and get 0

intervene weakly on one side and get $x - 1$

medium intervention on both sides and get $w - 2c$

$x < 1$ weak intervention is too costly to be worthwhile

w is large and c small so bloody conflict highly desirable and not much cost...

Two Intervenors

1. same cost structure

2. neither side has an advantage both get zero

3. each intervenor prefers their side to win

x for a favorable hot peace, $-x$ for an unfavorable one

$h > x$ for a favorable hegemony, $-h$ for an unfavorable one

assume also $h > c$ (would make the least cost intervention if your side got a hegemony)

The Great Game

	medium k	weak k	none
medium j	$-c*, -c*$	$-x-c, x-1$	$h-c*, -h$
weak j	$-x-1, x-c$	$-1, -1$	$-x-1, x*$
none	$-h, h-c*$	$x*, -x-1$	$0, 0$

unique Nash equilibrium with medium intervention on both sides and a prolonged conflict

15

Prolonged War?

historical instances of prolonged war brought about through outside intervention

Vietnam, Angola, El Salvador: cold war conflicts – great game for sure

Sudan, Lebanon, and Syria: Muslim regions no non-Muslim power cares whether Sunni's or Shia's gain a hegemony

the cynical collusion theory has some force: many believe that a unified Muslim world in control of a substantial fraction of the world oil supply is a threat, so keep them fighting is worth something

Western Europe perhaps miscalculated the cost not expecting refugees – except perhaps Germany which has taken advantage of them to rectify a long-standing demographic problem

Strong Versus Medium Intervention in the Great Game

we treated them as the same

makes a great deal of difference to the people living there

strong requires both sides to acquiesce

probably depends on whether both sides derive some advantage from peace

- Europe: yes

- Vietnam, Angola, El Salvador: no

- Korea?? (entire country very poor at the time of the war)