Diasporas and conflict

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Motivation

- Diasporas haved played major roles in the evolution of conflict in the home country, through targeted remittances, fund-raising, soft power, etc. → Rich literature in history & political science: Sri Lanka, Eritrea, Cuba, Croatia, etc.
- Sri Lanka (1983 – 2009): *"The Tamil diaspora is the economic backbone of the LTTE's campaign, bringing in large amounts of money through coerced and willing contributions. The LTTE uses its global infrastructure to generate political and diplomatic support within host countries."*, Fair (2005).
- In economics: overlooked question.

→ How do diasporas interact with local conflict in their homeland?

Economic literature

- Emerging empirical strand (macro & micro) tackling the effects of migration on politics in the home country.
  $\rightarrow$ Democracy, voting behaviours, etc.
  (E.g. Spilimbergo 2009, Docquier et al. 2013, Batista & Vicente 2011, Pfutze 2012, Chauvet & Mercier 2014, etc.).
- Civil war literature:
  - Standard contest models: *"an important limitation of the existing theoretical work on armed conflict causes"*, Blattman & Miguel (2010).
  - Empirical literature: Collier & Hoeffler 2004, positive correlation between the % of natives in the US and the probability of conflict onset in the home country.

Our paper

Model of conflict between 2 groups, over a contested resource (R), with the possibility of peace if their exists a sharing rule of the resource that makes both groups better off than conflict.

Introduction of a diaspora related to one of the two groups, which can get actively involved in the conflict by transferring a certain amount of resources to each soldier of its group.

Objectives: assess how the diaspora affects:
- the intensity of war,
- the likelihood of peace.

Our paper

Static specification with exogenous diaspora:

- the diaspora may affect the intensity of conflict,
- may be peace-wrecking or peace-building, and
- such effects depend on the characteristics of the home economy and the diaspora.

Dynamic setting with joint evolution of conflict and migration:

- different migration prospects lead to differential trajectories (towards conflict or peace), and
- multiple equilibria may arise.

Resident population

Resident population:

$\rightarrow \epsilon_O$ members of group O ("oppressed" group), productivity y.

$\rightarrow \epsilon_E$ members of group E ("elite"), productivity κy ($\kappa > 0$).

Group i's utility depends on:

- private consumption (derived from production), and
- access to the public good R, shared through violence or negotiation.

In each group, a social planner allocates the labor force between productive labor and conflict (share of soldiers = θ_i), so as to maximize the group's average utility.

Migrant population

Diaspora emanating from group O:
$\rightarrow$ m members, productivity $(1+\mu)y$ with $\mu > 0$.

The diaspora's utility depends on:

- private consumption (amount produced minus amount transferred to the homeland),
- access of its group of origin to the public good.

The social planner of the diaspora decides the amount of resources a to be sent to group O.

Sharing rule

- **In case of conflict:**

Groups E and O obtain share s and $(1-s)$ of R, respectively, with:

$$s(A_E, A_O) = \frac{\gamma A_E}{\gamma A_E + (1-\gamma)A_O}. \tag{1}$$

A_i: number of soldiers of group i,

γ: relative advantage of group E.

$\rightarrow$ Soldiers are removed from productive activities,

$\rightarrow$ A share δ of all the resources located in the economy is destroyed.

Sharing rule

- **In case of peace:**

  Groups E and O engage in a process of peaceful negotiation and agree on s if this makes both groups better off than conflict.

  $\rightarrow$ Allows to avoid destruction δ, and to keep all the labor force in the productive sector ($\theta_i = 0$);

  $\rightarrow$ But has a utility cost Z for both groups, because of:
  - time- or resource-consuming negotiation,
  - the lack of a perfect commitment technology,
  - past conflict/hatred.

Optimization programs

Leaders of groups E and O must decide $\boldsymbol{\theta_i}$, such that $A_i = \theta_i \epsilon_i$; leader of group M must decide the amount of resources a to be sent to group O.

Utility functions:

$$u_E = (1-\delta)((1-\theta_E)\kappa y + \chi s(A_E, A_O)R), \quad (2)$$

$$u_O = (1-\delta)((1-\theta_O)y + a\theta_O + \chi(1-s(A_E, A_O))R), \quad (3)$$

and

$$u_M = (1+\mu)y - a\frac{\theta_O \epsilon_O}{m} + (1-\delta)\eta\chi(1-s(A_E, A_O))R. \quad (4)$$

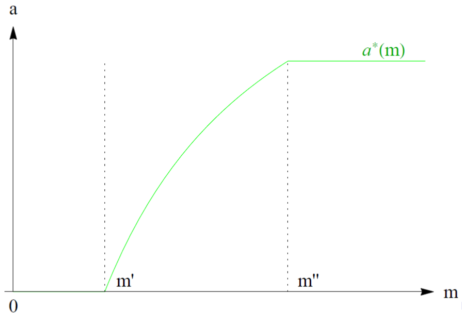
where χ is the preference for the public good of the residents, and $\eta\chi$ of the migrants.

Conflict equilibrium - Group M

Knowing $\theta^*_E(a)$ and $\theta^*_O(a)$, the diaspora decides a so as to maximize its utility.

Reaction functions

From $\partial u_M/\partial a = 0$, we can retrieve a^* as a function of m.



Conflict equilibrium - Group M

At equilibrium, there exists a threshold value m' such that a^* is equal to zero below m' and positive above; and a threshold value m'' such that a^* is constant above m''.

If $m' < m < m''$:

$$a^* = \frac{y(\epsilon_E + \epsilon_O)(m(1-\delta) - \epsilon_O)}{\epsilon_E(m(1-\delta) + \epsilon_O)}. \quad (5)$$

Assumption parameters

Complete expressions - a^*

Conflict equilibrium - Groups E and O

Below m' and above m'', θ_E^* and θ_O^* do not depend on m.

If $m' < m < m''$:

$$\theta_E^* = \frac{(\epsilon_O + m(1-\delta))(2\epsilon_E + \epsilon_O - m(1-\delta))}{4y(\epsilon_E + \epsilon_O)^2}\chi R, \tag{6}$$

and

$$\theta_O^* = \frac{(\epsilon_O + m(1-\delta))^2 \epsilon_E}{4y\epsilon_O(\epsilon_E + \epsilon_O)^2}\chi R. \tag{7}$$

θ_E^* is an inverted U-shaped function of m, θ_O^* increases with m.

Complete expressions - Thetas

War vs peace

The two groups engage in negotiation if $\exists\ s$ such that *both* groups are better off without fighting, i.e.$u_{i,w} < u_{i,p}$, $\forall i = E, O$.

Replacing a^*, θ_E^* and θ_O^* into utility functions (2) and (3) yields utilities in case of war:

$$u_{E,w} = (1-\delta)\left(y + \frac{(2\epsilon_E + \epsilon_0 - m(1-\delta))^2 \chi R}{4(\epsilon_E + \epsilon_O)^2}\right), \tag{8}$$

$$u_{O,w} = (1-\delta)\left(y + \frac{(\epsilon_O + m(1-\delta))^2 \chi R}{4(\epsilon_E + \epsilon_O)^2}\right). \tag{9}$$

To be compared with utilities in case of peace:

$$u_{E,p} = y + s\chi R - Z, \tag{10}$$

$$u_{O,p} = y + (1-s)\chi R - Z. \tag{11}$$

Condition for peace

Solving $u_{i,p} = u_{i,w}$ (for $i = E, O$), we can determine two threshold functions $\tilde{s}_E(m)$ and $\tilde{s}_O(m)$, such that:

- group E prefers peace if $s > \tilde{s}_E(m)$,
- group O prefers peace if $s < \tilde{s}_O(m)$.

$\Rightarrow$ A pacific settlement emerges only if $\tilde{s}_E(m) < \tilde{s}_O(m)$.

Diaspora and the peace – war arbitrage

When $m \leq m'$ and $m \geq m''$, $\tilde{s}_E$ and $\tilde{s}_O$ do not depend on m.

If $m' < m < m''$:

$$\tilde{s}_E(m) = \frac{Z - \delta y}{\chi R} + (1 - \delta)\left(\frac{(2\epsilon_E + \epsilon_0 - m(1-\delta))^2}{4(\epsilon_E + \epsilon_O)^2}\right), \quad (12)$$

$$\tilde{s}_O(m) = 1 - \left(\frac{Z - \delta y}{\chi R} + (1 - \delta)\left(\frac{(\epsilon_O + m(1-\delta))^2}{4(\epsilon_E + \epsilon_O)^2}\right)\right). \quad (13)$$

$\tilde{s}_E$ and $\tilde{s}_O$ are both decreasing with m, the peace-building or peace-wrecking effect of the diaspora depends on:

- the values of $\tilde{s}_E$ and $\tilde{s}_O$ when $m = 0$, and
- the two values of m such that $\tilde{s}_E = \tilde{s}_O$ ($\hat{m}$, $\bar{m}$).

Peace-building vs peace-wrecking diaspora: possible cases

There exists two values Z' and Z'' with $Z' < Z''$ such that:

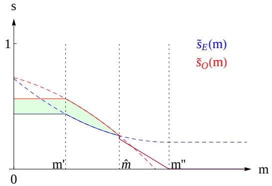
	$Z < Z''$	$Z > Z''$
$Z < Z'$	$m < m'$: peace ($\tilde{s}_E < \tilde{s}_O$) $m > m'$: $\tilde{s}_E$ and $\tilde{s}_O$ cross once **Case 1:** *peace-wrecking* diaspora	Impossible
$Z > Z'$	$m < m'$: war ($\tilde{s}_E > \tilde{s}_O$) $m > m'$: $\tilde{s}_E$ and $\tilde{s}_O$ cross twice **Case 2:** *peace-building* diaspora	$m < m'$: war ($\tilde{s}_E > \tilde{s}_O$) $m > m'$: $\tilde{s}_E$ and $\tilde{s}_O$ never cross **Case 3:** neutral diaspora

Expressions - Z' and Z"

Three possible cases

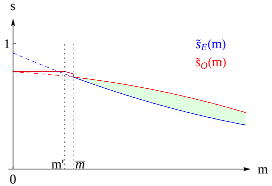
Case 1: Peace-wrecking

If $Z < Z' < Z''$:

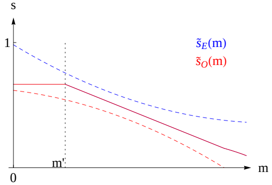


Case 2: Peace-building

If $Z' < Z < Z''$:



Case 3: Neutral If $Z' < Z'' < Z$:



Comparative statics

It can be shown that

(i) the threshold value $\hat{m}$ (switch from peace to conflict, case 1)

- decreases with Z, χ (if $Z < \delta y$), R (if $Z < \delta y$) (and η),
- increases with ϵ_O, ϵ_E (and γ);

(ii) the threshold value $\bar{m}$ (switch from conflict to peace, case 2)

- decreases with ϵ_O,
- increases with Z, χ (if $Z < \delta y$) and R (if $Z < \delta y$).

▸ Threshold values

Endogenous diaspora: a dynamic extension

The size of the diaspora evolves over time according to:

$$m_{t+1} = \zeta m_t + b[\bar{u} - u_{O,t}(m_t)] = f(m_t), \quad (14)$$

where $0 < \zeta \leq 1$ and $b > 0$.

The size of group O is progressively eroded by emigration:

$$\epsilon_{O,t} = (1 - m_t)\epsilon_O. \quad (15)$$

To avoid indeterminacy, we assume that in case of peace (if $\tilde{s}_E(m) < \tilde{s}_O(m)$):

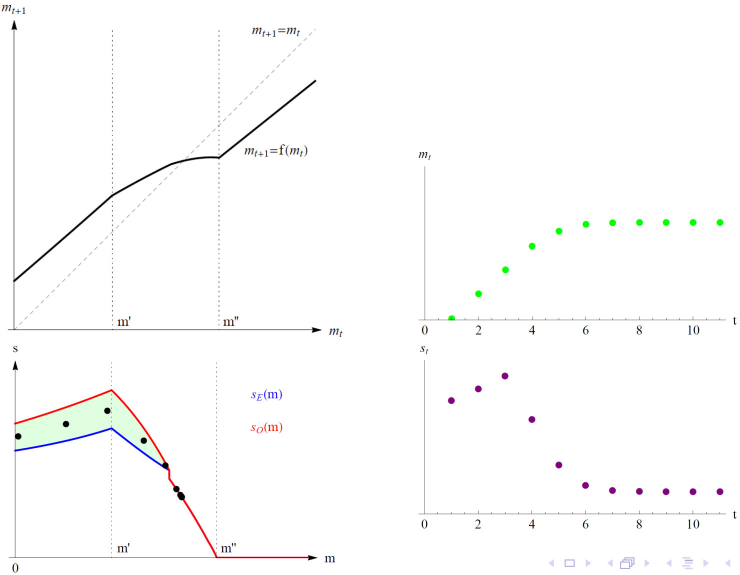
$$s(m) = \frac{\tilde{s}_O(m) + \tilde{s}_E(m)}{2}.$$

The resulting transition function is piecewise, depending on:

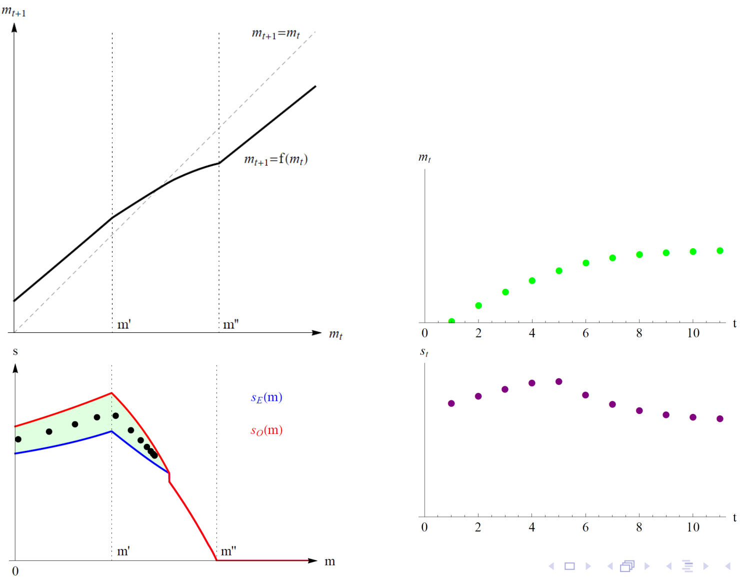
(i) whether s is the outcome of conflict or negotiation,

(ii) whether we have interior ($m' < m < m''$) or corner solutions.

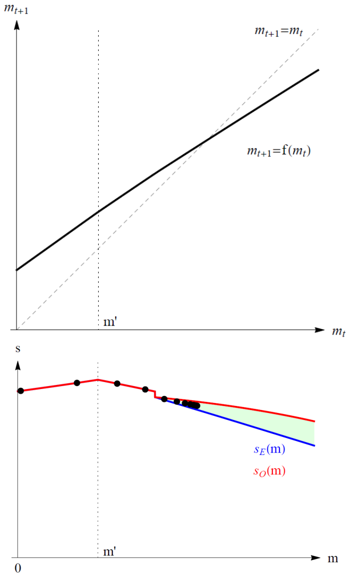
$Z < Z' < Z''$, b high

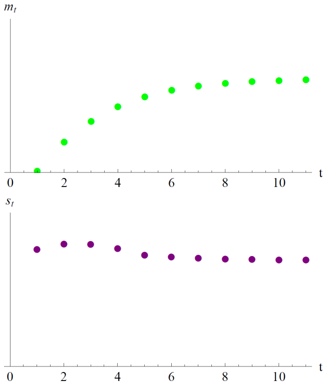


$Z < Z' < Z''$, b low

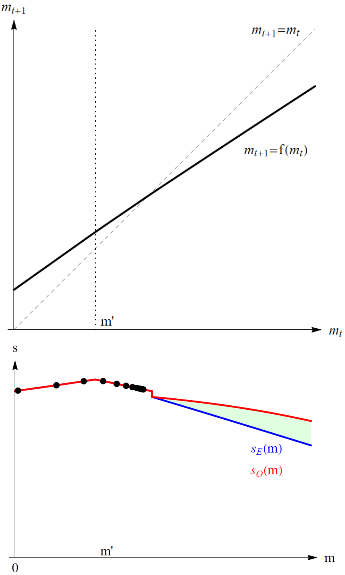


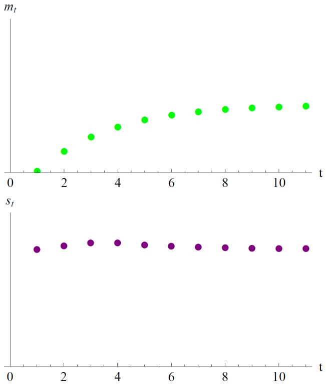
$Z' < Z < Z''$, b high



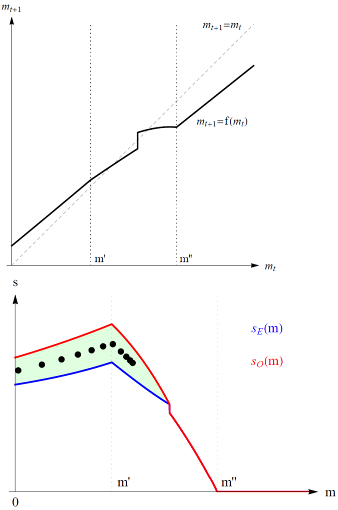


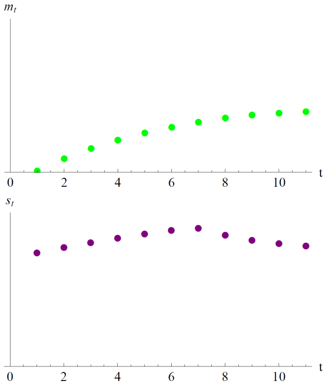
$Z' < Z < Z''$, b low



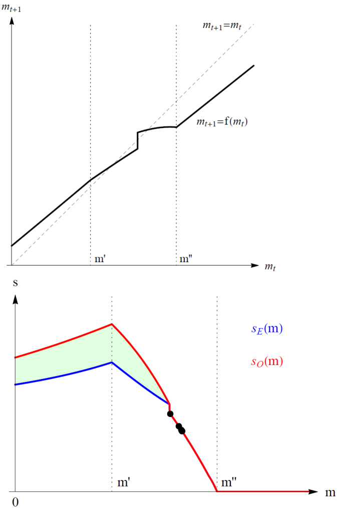


Multiple equilibria ($b_P < b_W$, m_0 small)





Multiple equilibria ($b_P < b_W$, m_0 large)



Summary of results

To sum up,

- we define an analytical framework to deal with the migration–conflict link;
- the model provides a rationale to explain differences across countries and diasporas;
- key factors:
  - demography (group size, migration),
  - preferences (at home and abroad),
  - openness,
  - etc.

Extensions

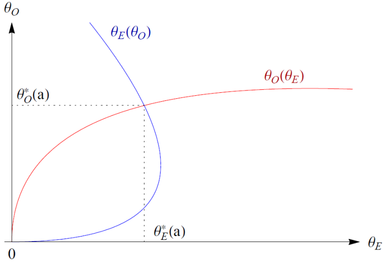
Our analysis can be extended, so as to consider

- migration from both groups (done);
- negative a^*;
- endogenous cost of peace;
- forward-looking migration;
- welfare and policy implications.

Thank you !

Reaction functions - Groups E and O

The two f.o.c.'s $\partial u_E / \partial \theta_E = 0$ and $\partial u_O / \partial \theta_O = 0$ yield reaction functions $\theta_E(\theta_O)$ and $\theta_O(\theta_E)$, for a given a.



Conflict equilibrium - Group M

Simplifying assumption

In order to have shorter expressions, we now impose a few restrictions on the parameters:

$\gamma = 1/2$ (symmetry in conflict),

$\kappa = 1$ (groups O and E have the same productivity),

$\eta = 1$ (migrants value the public good as much as residents).

The model, however, can be fully solved in the general case of $0 < \gamma < 1$, $\kappa > 0$ and $\eta > 0$.

Equilibrium a

In particular, there exist

$$m' = \frac{\epsilon_O}{1-\delta} \tag{16}$$

and

$$m'' = \frac{2\epsilon_E + \epsilon_O}{1-\delta}, \tag{17}$$

such that

$$a^*(m) = \begin{cases} 0 & \text{if } m \leq m' \\ \dfrac{y[\epsilon_E + \epsilon_O][(1-\delta)m - \epsilon_O]}{\epsilon_E[(1-\delta)m + \epsilon_O]} & \text{if } m' < m < m'' \; . \\ y & \text{if } m \geq m'' \end{cases} \tag{18}$$

Equilibrium a

More precisely:

$$\theta_E^* = \begin{cases} \frac{\epsilon_O \epsilon_E}{y(\epsilon_E + \epsilon_O)^2} \chi R & \text{if } m \leq m' \\ \frac{(\epsilon_O + m(1-\delta))(2\epsilon_E + \epsilon_O - m(1-\delta))}{4y(\epsilon_E + \epsilon_O)^2} \chi R & \text{if } m' < m < m'' \\ 0 & \text{if } m \geq m'' \end{cases} \cdot \tag{19}$$

and

$$\theta_O^* = \begin{cases} \frac{\epsilon_O \epsilon_E}{y(\epsilon_E + \epsilon_O)^2} \chi R & \text{if } m \leq m' \\ \frac{(\epsilon_O + m(1-\delta))^2 \epsilon_E}{4y\epsilon_O(\epsilon_E + \epsilon_O)^2} \chi R & \text{if } m' < m < m'' \\ \frac{\epsilon_E}{y\epsilon_O} \chi R & \text{if } m \geq m'' \end{cases} . \tag{20}$$

Equilibrium thetas

$$Z' = \delta y + \frac{[2\epsilon_E \epsilon_O + \delta(\epsilon_E^2 + \epsilon_O^2)]\chi R}{2(\epsilon_E + \epsilon_O)^2}$$

and

$$Z'' = \delta y + \frac{(1+\delta)\chi R}{4}$$

▸ Table

$$\hat{m} = \frac{\epsilon_E(1-\delta)\chi R + \epsilon_E\epsilon_O\sqrt{(1-\delta)\chi R[4(\delta y - Z) + (1+\delta)\chi R]}}{(1-\delta)^2\chi R} \quad (21)$$

$$\bar{m} = \frac{\epsilon_E(1-\delta)\chi R - \epsilon_E\epsilon_O\sqrt{(1-\delta)\chi R[4(\delta y - Z) + (1+\delta)\chi R]}}{(1-\delta)^2\chi R} \quad (22)$$

Comparative statics