Commitment Problems

The Social Dilemma

You would take a good action if I would credibly promise to do something in the future

You can't trust me to follow through on my promise

You take a different action as a result of the lack of trust that makes both of us worse off

If just one player could commit, there would be a Pareto improvement

- Different from pure externalities case, where everyone must be able to commit

Outline

Why is there costly conflict?

2 parties are having a dispute

- War
- Law Suit
- Strikes
- Bargaining over an externality

Costly conflict occurs if bargaining fails to reach a resolution

Because conflict is costly, a bargain exists that makes both sides better off

The Puzzle

Value of the prize: B

Cost of conflict: c

Probability party 1 wins: p

If fight:

$$U_1 = pB - c \qquad U_2 = (1-p)B - c$$

Bargaining can yield the payoffs

$$U_1 = pB \qquad U_2 = (1-p)B$$

Explaining Costly Conflict

Overconfidence

Indivisibility

Commitment Problems

Negotiation and Conflict

Divided Society with two groups:

- Large (L)
- Small (S)

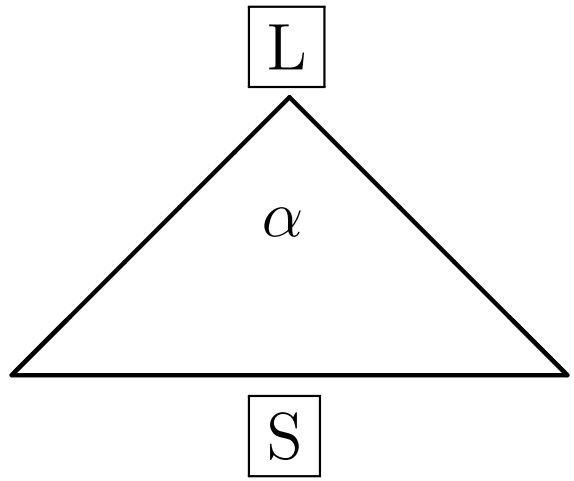
Large divides resources, B

- Keep share α and give $1-\alpha$ to Small

Small group can accept $1-\alpha$ or start conflict

- Small group wins conflict with probability p_2

The Extensive Form Game



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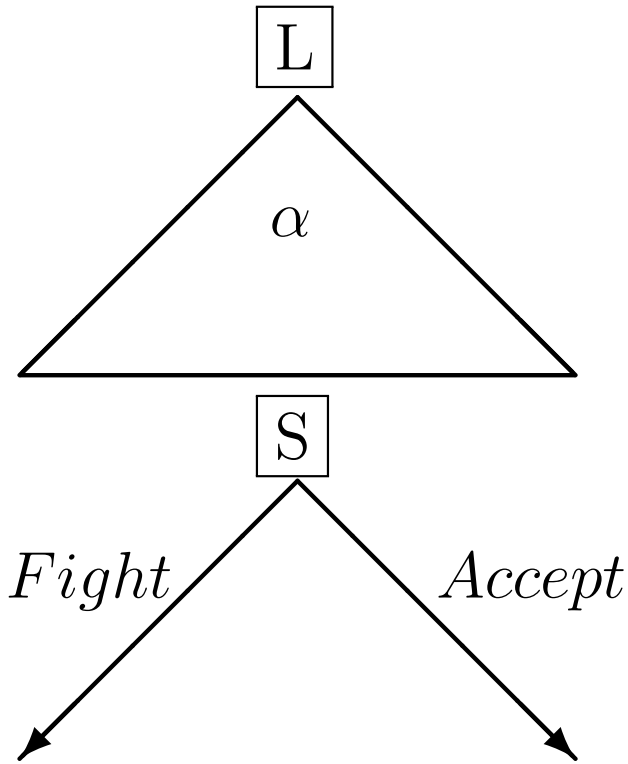

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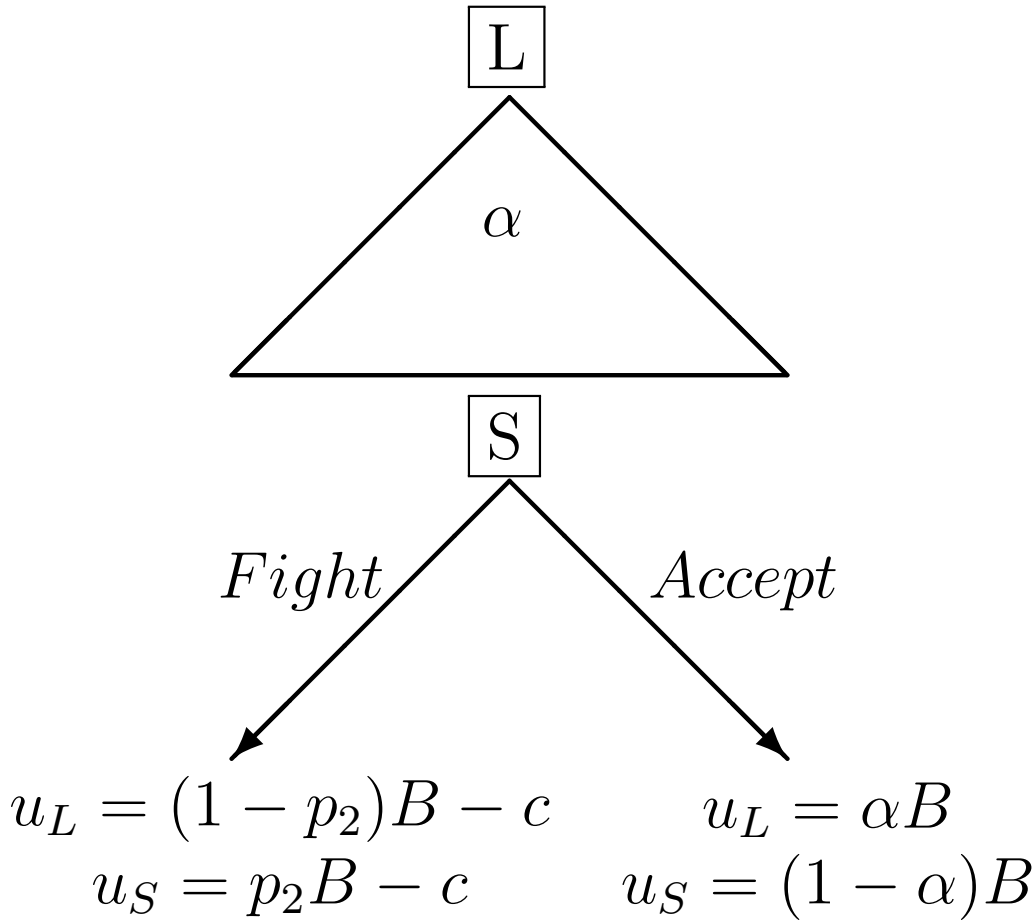

Small's best-response

Accept if:

$$\alpha < 1 - p_2 + \frac{c}{B}$$

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Fight if:

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Small's best-response

Accept if:

$$\alpha < 1 - p_2 + \frac{c}{B}$$

Fight if:

$$\alpha > 1 - p_2 + \frac{c}{B}$$

Indifferent if:

$$\alpha = 1 - p_2 + \frac{c}{B}$$

Large's best response

Suppose Small accepts when indifferent (recall the ultimatum game)

Large wants to maximize her share

- Choose largest $\alpha \leq 1 - p_2 + \frac{c}{B}$

Subgame Perfect Nash equilibrium:

- $\alpha^* = 1 - p_2 + \frac{c}{B}$
- Fight if $\alpha > 1 - p_2 + \frac{c}{B}$; Accept if $\alpha \leq 1 - p_2 + \frac{c}{B}$

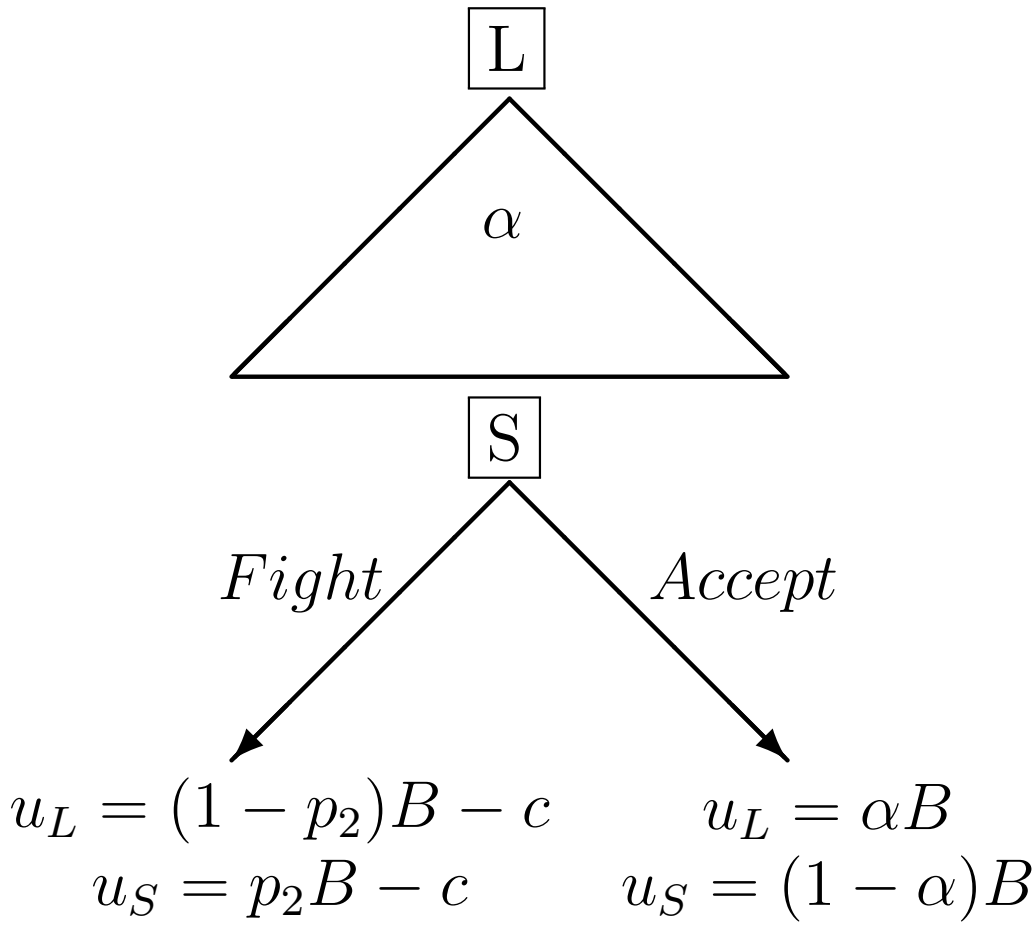
Preemptive Conflict

Same model but with an initial stage in which Small can start preemptive conflict

Small wins preemptive conflict with probability $p_1 > p_2$

Idea is that Large is consolidating power

Preemptive Extensive Form Game



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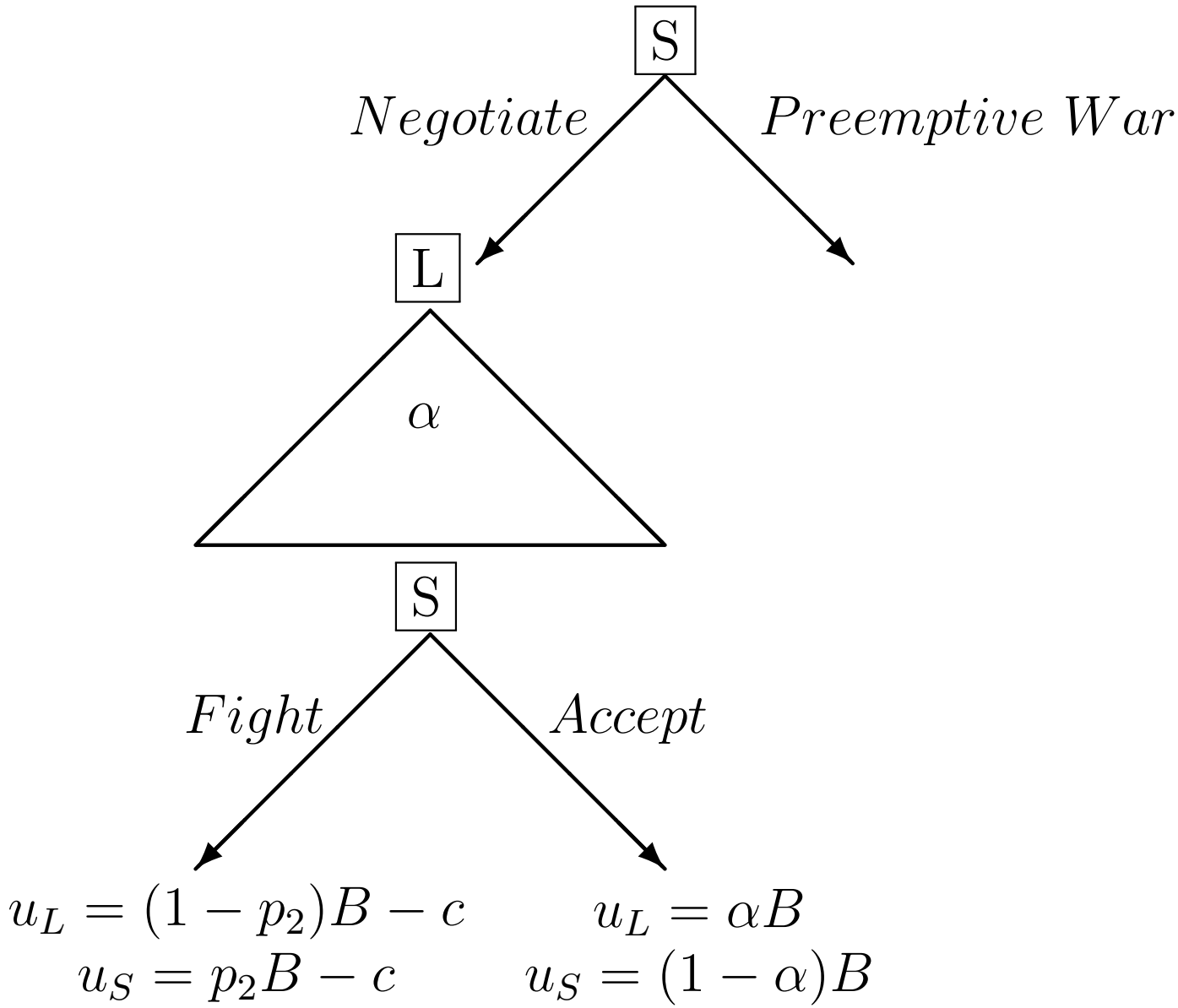

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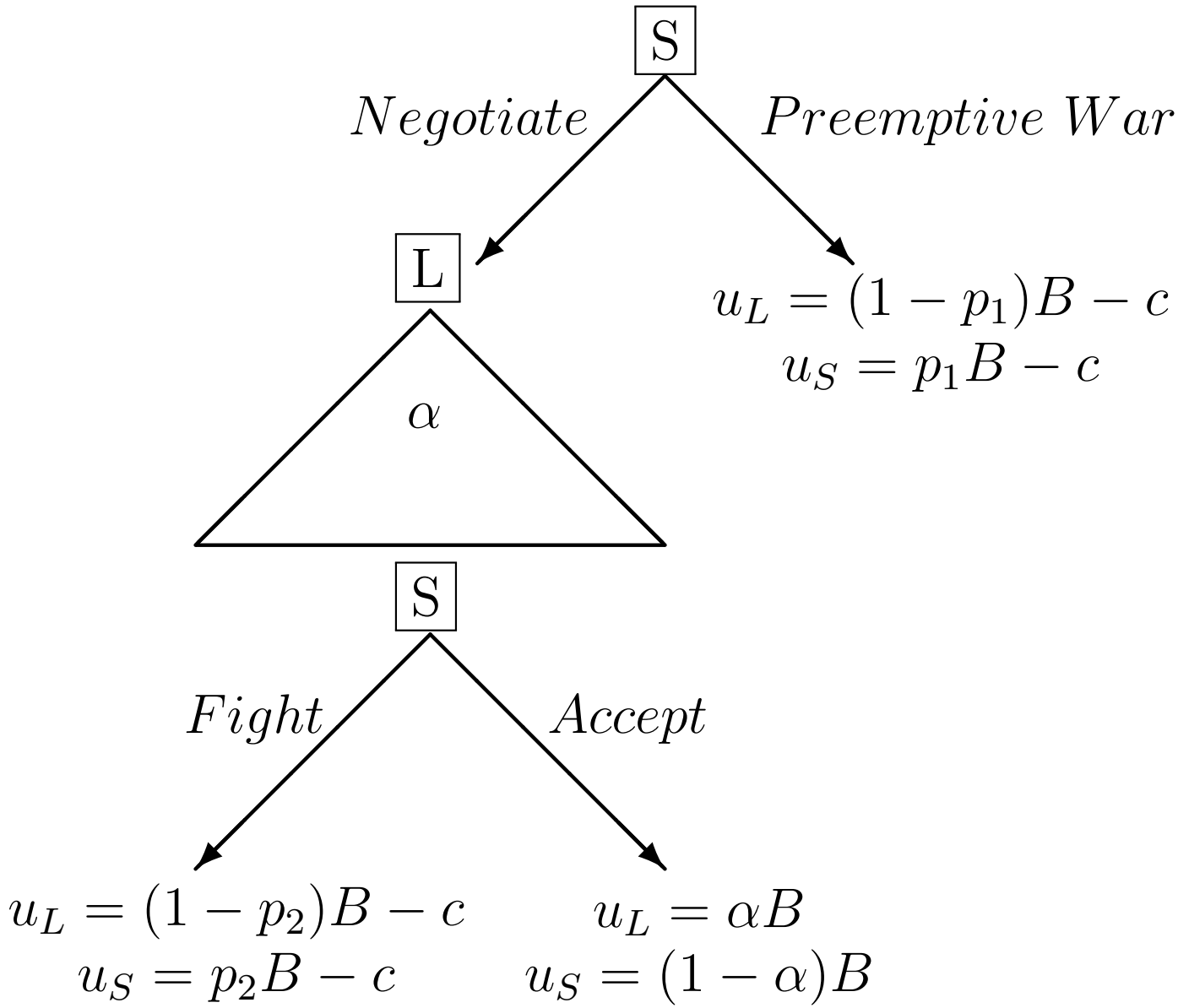

Preemptive Attack

Without preemptive war, Small's payoff is $p_2 B - c$

With preemptive war, Small gets $p_1 B - c$

Preemptive war is a best-response

A Pareto Improvement

Suppose Large could commit to proposing $\alpha = 1 - p_1$

Small would accept

$$p_1 B > p_2 B - c$$

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Large's Payoff

- Equilibrium: $(1 - p_1)B - c$
- Suggested offer: $(1 - p_1)B$

Small's Payoff

- Equilibrium: $p_1 B - c$
- Suggested offer: $p_1 B$

Commitment Problem

Large cannot commit to $\alpha = 1 - p_1$

Once Small foregoes preemptive war, Large will renege and propose $\alpha = 1 - p_2 + \frac{c}{B} > 1 - p_1$

Small's payoff is then $p_2 B - c$

Thus, Small launches a preemptive war

Examples

Elites inside firm or organization blocking technological change

Immigration reform

Labor/Management dispute

Negotiating with terrorists

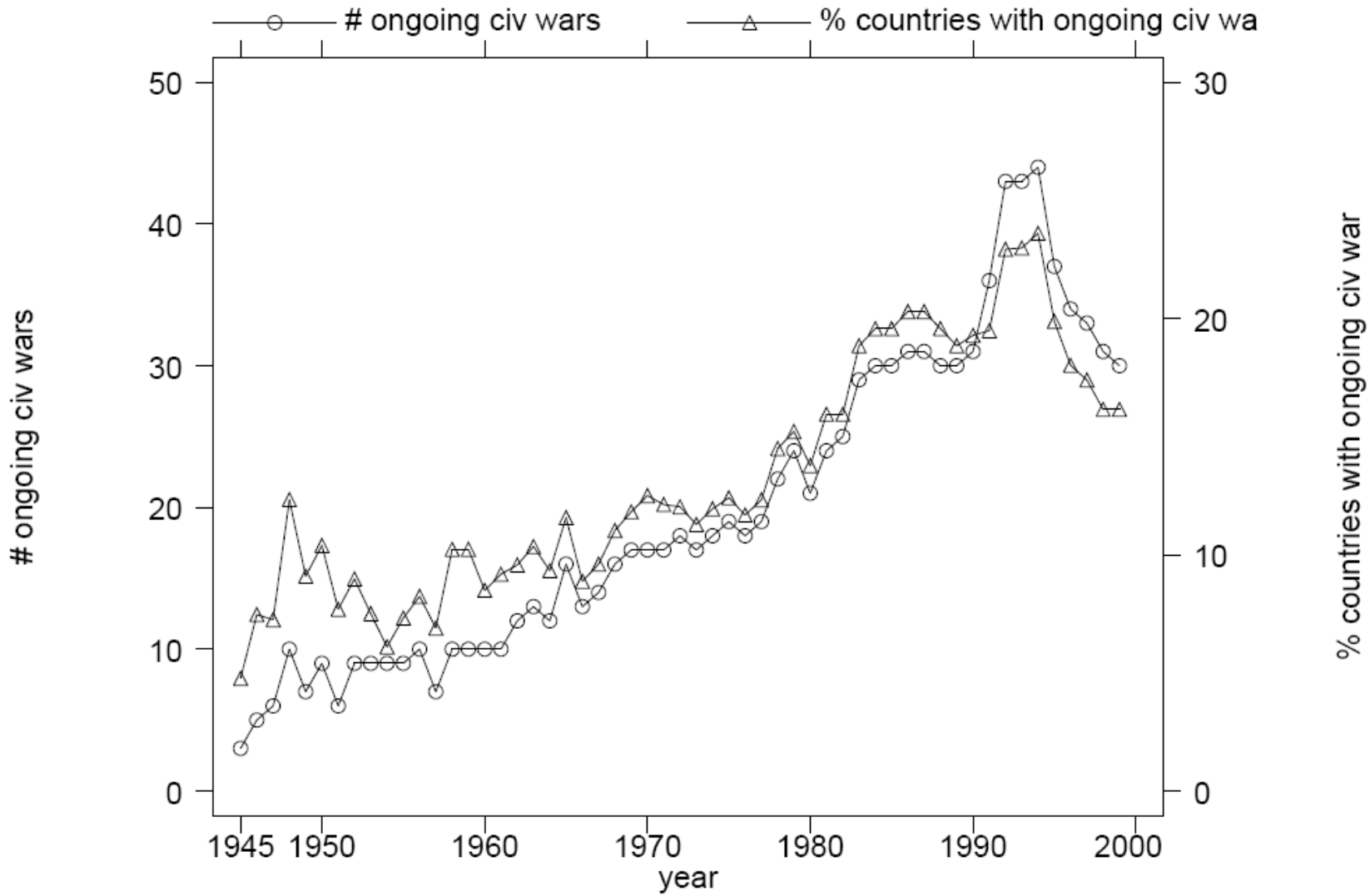
Civil wars and the end of the Cold War

Fall of the Soviet Union eliminates third-party guarantor of negotiated settlements in civil wars

This creates commitment problems, as ethnic minorities are no longer protected

Leads to increase in civil wars

Civil Wars, 1945–2000



Croatia

In 1991, Serb nationalists take power in Yugoslavia

In June, Croatia (minority state) declares independence

- Leads to 1991–1995 war between Croats and Serbs

"Nested minority" Serbs in Krajina

- Attempt to break away from Croatia
- End up fleeing to Kosovo

Nested minorities in Yugoslavia

Outline

The Hold-up Problem

Need up-front investment by an upstream producer

After investment has taken place, bargaining power shifts to the downstream producer

Leads to under-investment by the upstream firm

A Model

Upstream producer decides whether or not to produce, at cost c

Downstream producer offers a price p for product

- Values product at α per unit

Upstream producer can accept the offered price or use the product by itself

- Values the product at $\beta < \alpha$ per unit

Subgame Perfect Nash equilibrium

Upstream will accept any price, $p \geq \beta$

Downstream will offer $p = \beta$

Upstream will produce if $\beta \geq c$

Utilitarian Optimum

Social payoff after production is $\alpha - c$

Social payoff after no production is 0

Social optimum is to produce if $\alpha > c$

Upstream firm underinvests

Examples of Hold-up Problems

Supplier invests in infrastructure to build product to company's specifications

An inventor selling an invention to user with highest valuation

Users of specialized software

A partnership where one partner invests in technical expertise and the other in client relations

Policy Responses to Commitment Problems

Complete Contracts

Decrease asset specificity

Multiple Suppliers

Vertical Integration

Instill trust

Take Aways

Commitment problems arise in dynamic settings due to shifting circumstances and incomplete contracting

Give rise to inefficient behavior due to anticipation of future circumstances

One solution is to create institutions

Another solution is to add improve the contracting environment