Targeting Autocrats:
Economic Sanctions and Regime Change

Manuel Oechslin

University of Bern / WTI

Introduction (I)

International economic sanctions · · ·

- ▶ have become an increasingly important foreign policy tool ($\rightarrow$ in the 1914-2000 period, there were 187 sanctions episodes, about 66 of which started after 1989)

- ▶ usually combine restrictions on international trade and investment and are viewed as an instrument to induce specific changes in a target country

- ▶ are most frequently imposed to promote "regime change and democratization" ($\rightarrow$ 46% of the cases in the 1914-2000 period, according to Hufbauer et al., 2007)

The theory behind economic sanctions:

- ▶ The basic view on how sanctions work is quite intuitive (see, e.g., Mack and Khan, 2000):

  "The pain inflicted by sanctions on citizens of target states will cause them to pressure their government into making the changes demanded by the sanctioning body."

- ▶ Yet, very little analytical work has actually been devoted to the exact channels through which sanctions are supposed to promote their goal (e.g., regime change and democratization)

- ▶ As a result, our understanding of the underlying mechanisms and factors determining the likelihoods of success and failure are highly incomplete

Introduction (II)

· · · and the evidence:

▶ So far, economic sanctions have generally not been too successful: According to Hufbauer et al. (2007), 65% of the 187 episodes in the 1914-2000 period can be labeled as a complete failure

▶ Sanctions to promote regime change and democratization have a particularly poor track record: 80% of these episodes failed completely – although the pain inflicted was on average substantial ($\rightarrow$ *Figure* 1)

▶ Moreover, some sanctions episodes were not only ineffective but induced the targeted regimes to pursue policies which severely compounded the direct adverse economic consequences

For instance, referring to the Situation in Iraq, Mueller and Mueller (1999) note that · · ·

"the country's political leadership sometimes seems more interested in maximizing the nation's suffering (…) than in relieving it."

This paper · · ·

▶ focuses on sanctions imposed to promote regime change and democratization (which is a very frequent but rarely achieved goal)

▶ develops a model of non-democratic politics in order to systematically explore the economic and political consequences of such sanctions

▶ indentifies circumstances under which such sanctions are more likely too succeed

Introduction (III)

Figure 1 – Growth rates prior to and during sanctions episodes (1960 – 2000)
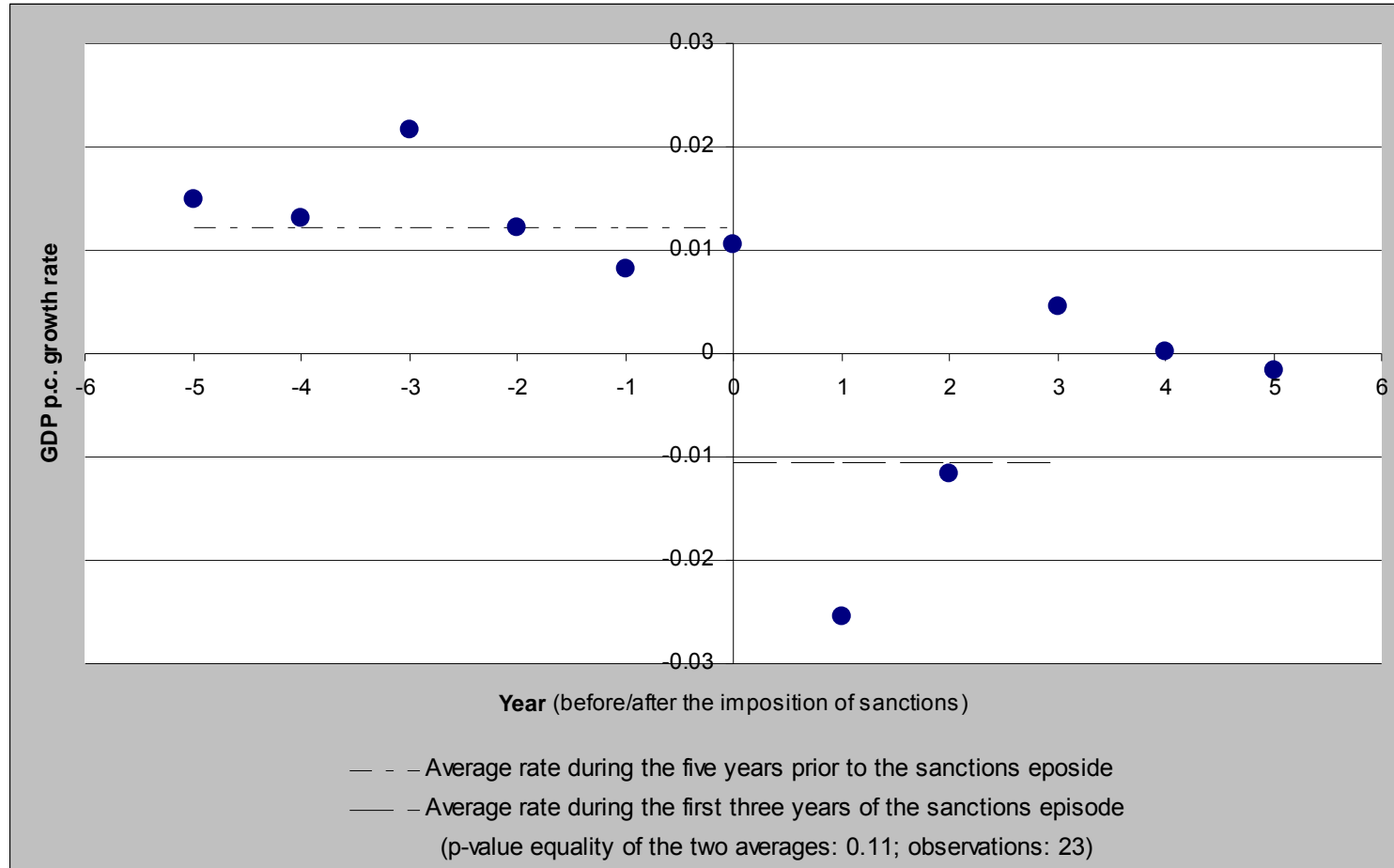
Note: Included are sanctions imposed on autocracies (according to the Polity-IV definition) with the aim to promote regime change and democratization (according to the definition by Hufbauer et al., 2007). *Data sources*: Hufbauer et al. (2007) for the sanctions data; WDI Quick Queries (online resource) for the GDP p.c. data; Polity-IV database (online resource) for the regime-type data.

Overview of the Talk

Anecdotal evidence from two recent target countries:

- ▸ Haiti (1991-1994)

- ▸ Iraq (1990-2003)

The model:

- ▸ Basic assumptions

- ▸ Timing of events and equilibrium concept

The equilibrium:

- ▸ Democracy

- ▸ Dictatorship: Sanctions intensity and effectiveness

- ▸ Discussion: Main results and the comparative-static properties

Extension: Heterogeneity and social welfare:

- ▸ The equilibrium in a slightly modified set-up

- ▸ Sanctions, heterogeneity, and social welfare

Conclusions

Anecdotal Evidence – Haiti

The episode (1991 – 1994):

▶ In 1991, the OAS (later on backed by the U.N.) imposed economic sanctions in response to a military coup that ousted the democratically elected Aristide government; the aim was to restore democracy

▶ Even with U.N. backing, however, the sanctions did not achieve their goal; eventually, a U.S. military operation restored democracy in September 1994

▶ During the sanctions episode, the GDP p.c. declined by almost 10% p.a. (WDI) and the state almost stopped to perform its functions (Gibbons, 1999)

The authorities' destructive response: The new authorities, for instance, · · ·

▶ systematically destroyed part of the agricultural infrastructure and – by arbitrarily expropriating the farmers' returns – "wiped away any incentive to invest in economic activity." (Werleigh, 1995)

▶ hampered the functioning of local water management committees and, as a result, severely compounded the supply problems stemming from the embargo (Gibbons and Garfield, 1999)

▶ deprived the entire public health system of a broad set of vital supplies (by impounding medicine, humanitarian fuel, etc.) and hastily abandoned vital immunization programs (Gibbons, 1999)

In this regard, other observers note that the · · ·

"sharp fall in the quality and coverage of [health] services" was largely due to the striking "absence of commitment to public health on the part of the Haitian army." (Farmer et al., 2003)

Anecdotal Evidence – Iraq

The episode (1990 – 2003):

- In 1990, the U.N. Security Council imposed economic sanctions in response to the Iraqi invasion of Kuwait; the goal was to impair Iraq's military potential and to promote regime change and democratization

- The second goal, however, was not achieved and it took again an U.S.-led military operation to oust the regime in May 2003

- Although reliable numbers are missing, it seems that the decline in economic activity and government services was even more severe than in Haiti

The authorities' destructive response: The Iraqi government, for instance, · · ·

- deliberately deprived a substantial fraction of the population of government services and participation in the economy, with about 3.1 million people subjected to a "total internal embargo" (Reuther, 1995)

- deprived the population of medical supplies so that ordinary citizens "had been subjected to two sets of sanctions, those of the United Nations and those of Saddam Hussein himself." (Rieff, 2003)

- was, according to Mueller and Mueller (1999), sometimes "more interested in maximizing the nation's suffering (…) than in relieving it."

The Model – Basic Assumptions (I)

Agents, preferences, and economic activity:

- ▶ Infinite-horizon economy, populated by a continuum $1 + \varepsilon$ of individuals

  - A mass 1 of these individuals are ordinary citizens (group 1)

  - The remaining ε individuals constitute the ruling elite (group 0)

  - The individuals derive utility from consumption of the unique non-storable final good according to

  $$U_{i,t} = E_t \left\{ \sum_{s=0}^{\infty} \beta^s \ln c_{i,t+s} \right\}, \qquad (1)$$

  whereas $c_{i,t}$ refers to consumption by the representative member of group $i \in \{0,1\}$

- ▶ The final good originates from two different sectors: In each period t, $\cdots$

  - each ordinary citizen produces an income (output minus cost of inputs) of

  $$y_t = A_t \left(F(G_t) - \rho_t \chi \right) \qquad (2)$$

  units of the final good, whereas G_t is the level of the public good; F is and increasing function shown in *Figure* 2; A_t is a productivity parameter; $(\rho_t) A_t \chi$ is the cost of "revolutionary activity"

  - the government-owned "natural resource" sector generates an income of $A_t N$ units of the final good

The Model – Basic Assumptions (II)

Policies and the government budget:

▶ In each period t, two policy variables have to be determined

- The uniform tax rate on the citizens incomes, $\tau_t \leq \delta < 1$

- The level of the public good, G_t

▶ The cost of G_t is $A_t G_t$ so that – since the government cannot go into debt – the public budget constraint is

$$\tau_t A_t \left(F(G_t) - \rho_t \chi \right) + A_t N \geq A_t G_t + \varepsilon c_{0,t} \qquad (3)$$

▶ The relationship between public expenses, private income, and tax revenues is given in *Figure* 3

Political regimes and the transition of political power:

▶ There are two political regimes, dictatorship (~ elite rule) and democracy; the political state is indicated by $S_t \in \{R, D\}$, whereas D stands for democracy, $S_0 = R$, and D is an "absorptive" state

▶ As long as $S_t = R$, in each period t, the citizens may attempt to oust ruler. The decision in this respect is denoted by $\rho_t \in \{0,1\}$, with 1 indicating a decision in favor:

- If $\rho_t = 1$, we have $S_{t+1} = D$ with probability $p > 0$

- If $\rho_t = 0$, we have $S_{t+1} = R$

The Model – Basic Assumptions (III)

Political regimes and $\cdots$ (continued):

▸ In case the citizens decide to topple the regime ($\rho_t = 1$), each citizen bears an individual cost of $A_t \chi$ units of the final good

▸ Some technical assumptions

$$\chi < F^l \quad \text{and} \quad F^m < \phi\chi, \text{ with } \phi \equiv \left(1 - \beta(1-p)\right)/(\beta p) \tag{4}$$

Economic sanctions:

▸ The sole aim of the sanctioning body (~ sender state) is to induce a transition from state R to D

▸ To pursue this goal, it can push the productivity parameter A below is "natural" level which is normalized to 1

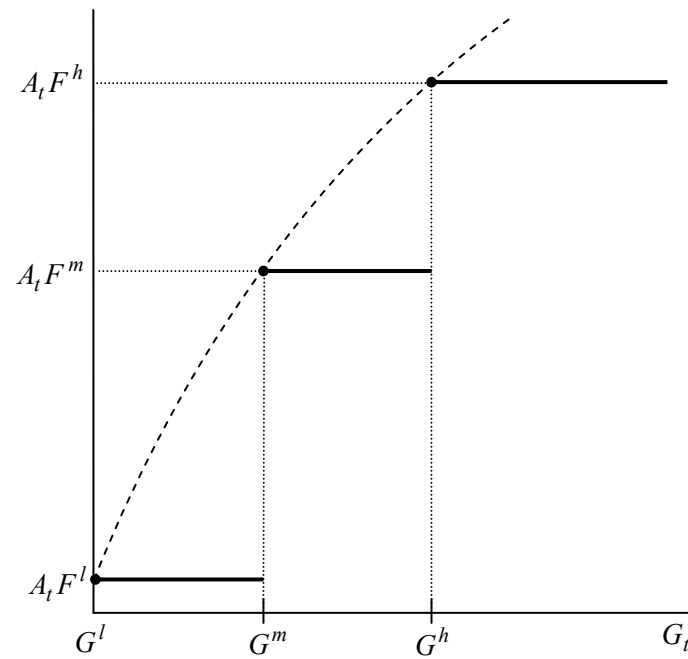▸ The only variable the sender state can condition on is the political state so that the sanctions strategy is

$$A_t = \begin{cases} 1 & : \quad S_t = D \\ \underline{A} & : \quad S_t = R \end{cases}, \text{ whereas } \underline{A} < 1 \tag{5}$$

▸ Henceforth, $\Delta \equiv 1/\underline{A} \in [1, \infty)$ is used as a measure for the intensity of the sanctions
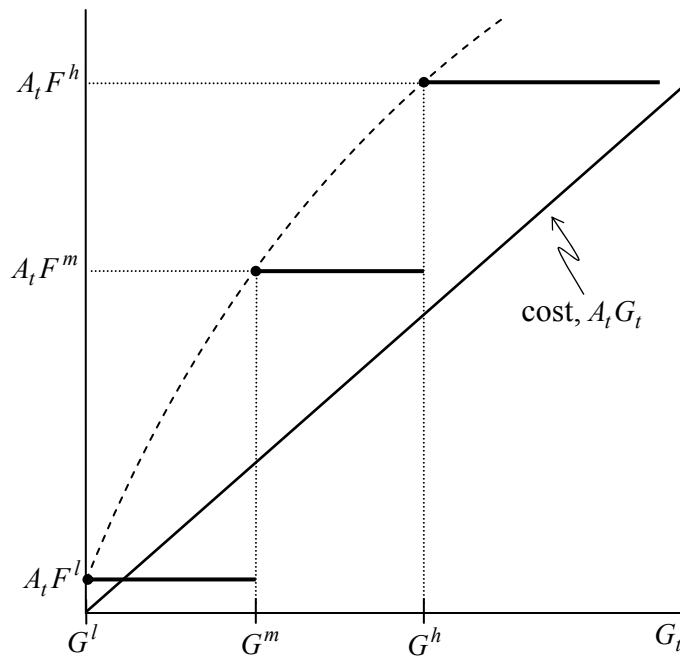
The Model – Basic Assumptions (IV)

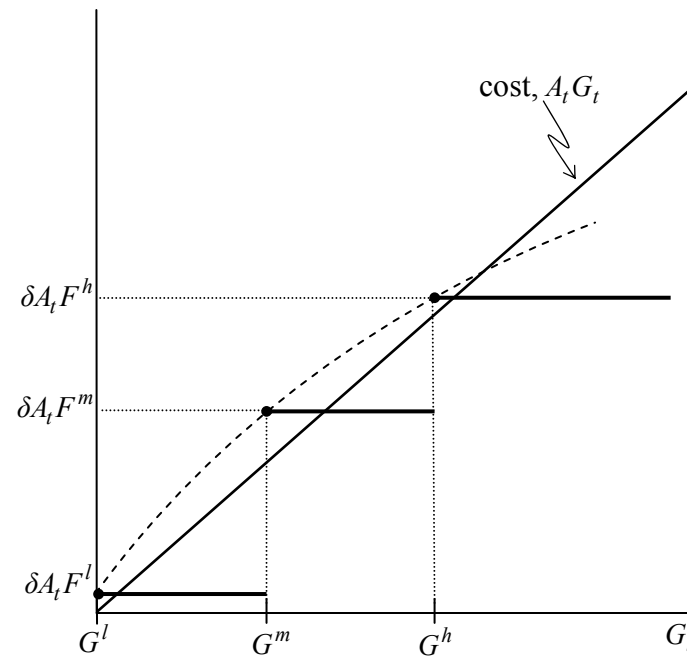Figure 2 – The public good and the representative citizen's income

Figure 3 – Public expenses, private-sector income, and tax revenues

a. Private-sector income and public expenses   *b*. Maximum tax revenues and public expenses

The Model – Equilibrium Concept and Timing of Events

Equilibrium concept:

- ▶ (Pure strategy) Markov Perfect Equilibrium (MPE) where strategies depend only on the payoff-relevant states and prior actions within the same period

Timing of events:

- ▶ Suppose $S_t = R$:

  - The ruler determines the policy vector, $\Pi_t = (\tau_t, G_t)$

  - The two groups $i \in \{1,2\}$ simultaneously decide on $\rho_{i,t} \in \{0,1\}$

  - All decisions are implemented, the payoffs materialize, and the period ends; if $\rho_t = 1$, we have $S_{t+1} = D$ with probability $p > 0$; if $\rho_t = 0$, the probability of $S_{t+1} = D$ is zero

- ▶ Suppose $S_t = D$:

  - The citizens determine $\Pi_t = (\tau_t, G_t)$

  - Π_t is implemented, the payoffs materialize, and the periods ends (whereas $S_{t+1} = D$)

The Equilibrium – Democracy

Policies:

- The tax rate is chosen in a way that exactly allows to finance the public good, i.e., $\tau_t = (F(G_t) - N)/G_t$ so that

$$c_{1,t} = F(G_t) - G_t + N,\qquad(6)$$

- The level of the public good is chosen to maximize (6): $G_t = G^h$

Value function:

- Since switching back to dictatorship is impossible, identical policies will be implemented in $t+1, t+2, \cdots$

- Thus, the uniform level of (lifetime-)utility incurred by each citizen is

$$V(D) = \frac{\ln(F^h - G^h + N)}{1 - \beta}\qquad(7)$$

The Equilibrium – Dictatorship: Sanctions Intensity and Effectiveness (I)

The basic trade-off:

- In a given period t, the representative citizen opposes a challenge if

$$\ln\left[(1-\tau_t)\underline{A}F(G_t)\right] + \beta V(R) > \ln\left[(1-\tau_t)\underline{A}(F(G_t)-\chi)\right] + \beta\left(pV(D)+(1-p)V(R)\right)$$

- Rearranging terms gives

$$\ln\left(\frac{F(G_t)}{F(G_t)-\chi}\right) > \beta p\left(V(D)-V(R)\right), \tag{8}$$

 which says that the *short-run* utility cost must exceed the expected *long-run* benefit

Some first results: In any MPE, as long as $S_t = R$, $\cdots$

- the ruler sets the maximum tax rate: $\tau_t = \delta$

- does not choose levels of G other than G^m or G^l

The Equilibrium – Dictatorship: Sanctions Intensity and Effectiveness (II)

Two thresholds: Note that $\cdots$

- ▸ the following two thresholds will be instrumental in describing the equilibrium:

$$\Lambda_1 \equiv \left(\frac{F^m}{F^m - \chi}\right)^{(1-\beta)/(\beta p)} \frac{(1-\delta)F^m}{F^h - G^h + N} \qquad \Lambda_2 \equiv \left(\frac{F^l}{F^l - \chi}\right)^{(1-\beta)/(\beta p)} \frac{(1-\delta)F^l}{F^h - G^h + N}$$

- ▸ we have $\Lambda_1 < \Lambda_2$ due to (4)

Three types of equilibria: Suppose that $\Lambda_1 > 1$. Then, depending on Δ, the following MPE exist ($\rightarrow$ *Figure* 4):

- ▸ *Equilibrium 1*: If $\Delta < \Lambda_1$ ("mild" sanctions), there is an MPE where $\Pi_t = (\delta, G^m)$ and $\rho_t = 0$ for all t (and there is also Equilibrium 2 if $(F^l / F^m)\Lambda_1 \leq \Delta$)

- ▸ *Equilibrium 2*: If $\Lambda_1 \leq \Delta < \Lambda_2$ ("substantial" sanctions), there is a unique MPE where $\Pi_t = (\delta, G^l)$ and $\rho_t = 0$ for all t

- ▸ *Equilibrium 3*: If $\Lambda_2 \leq \Delta$ ("comprehensive" sanctions), there is a unique MPE where $\Pi_t = (\delta, G^l)$ and $\rho_t = 1$ as long as $S_t = R$

The Equilibrium – Dictatorship: Sanctions Intensity and Effectiveness (III)

Figure **4 –** Sanctions intensity and the nature of the equilibrium
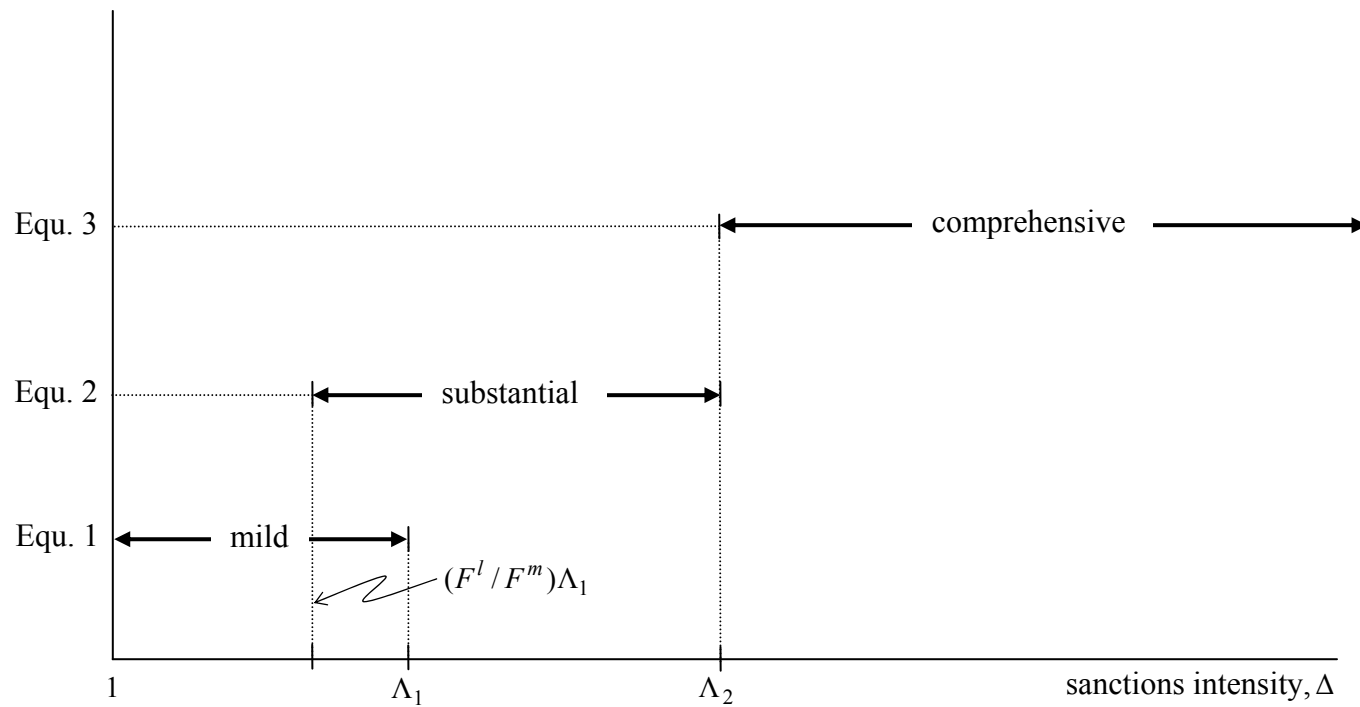
Discussion – Main Results and Comparative-Static Properties (I)

Sanctions' intensity and effectiveness:

▸ If $\Lambda_1 > 1$, intensity and effectiveness of sanctions are related in a non-monotonic way ($\rightarrow$ *Figure* 5):

- Imposing an "intermediate" intensity may not only be ineffective but detrimental in the sense that such sanctions push policies farther away from those preferred by the citizens

- Imposing a "high-intensity" regime may be effective in the sense that it in fact improves the chances of regime change and democratization

▸ The intuition is as follows:

- As the sanctions regime becomes more intense, the expected benefit from challenging the ruler rises ($\rightarrow$ a switch to *D* brings larger increase in productivity and hence income)

- To remain unopposed, the ruler increases the cost side by lowering the supply of the public good ($\rightarrow$ lowering *G* reduces the citizens' current income and hence increases the MUoC)

- This strategy reaches its limits as soon as the supply of *G* hits the lower bound: Then, the short-run utility cost can no longer be increased so that a further tightening inevitably destabilizes the regime

- The defense strategy works despite the fact that it also increases the expected benefit from a revolt: Due to the concavity of the *ln*-function and the fact that a revolt may fail, we have

  Δ short-run cost of a revolt > Δ future expected benefit

Discussion – Main Results and Comparative-Static Results (II)

Comparative-static results: Other things equal, the minimum intensity to make sanctions work,

$$\Lambda_2 \equiv \left(\frac{F^l}{F^l - \chi} \right)^{(1-\beta)/(\beta p)} \frac{(1-\delta)F^l}{F^h - G^h + N},$$

▶ is lower in more advanced countries, i.e., in places where $\cdots$

- private-sector technologies are more advanced in the sense that the payoff from investing in public goods (i.e., $(F^h - G^h)/F^l$) is higher

- the state's bureaucratic capacity (i.e., its ability to tax economic activity, δ) is higher

▶ is higher in countries with a stronger "repressive capacity", i.e., in places where $\cdots$

- the cost of revolting (χ) is high

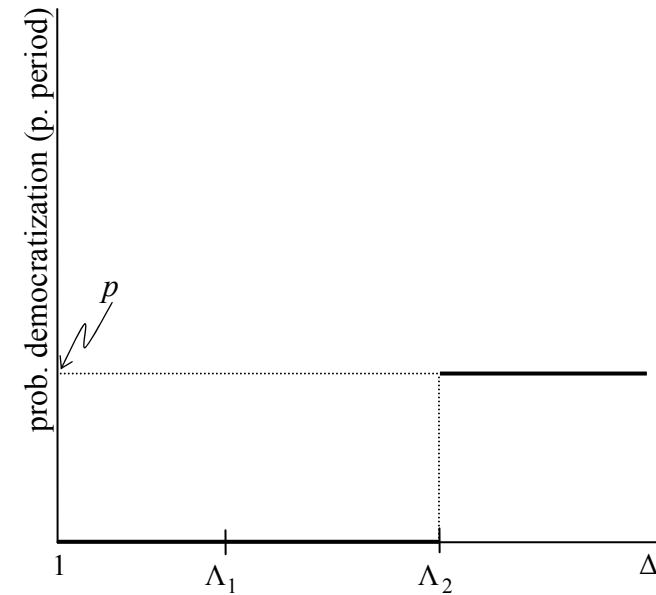- the success probability (p) is low

Figure 5 – Sanctions intensity and effectiveness under dictatorship (with $\Lambda_1 > 1$)

a. Sanctions and the supply of public goods
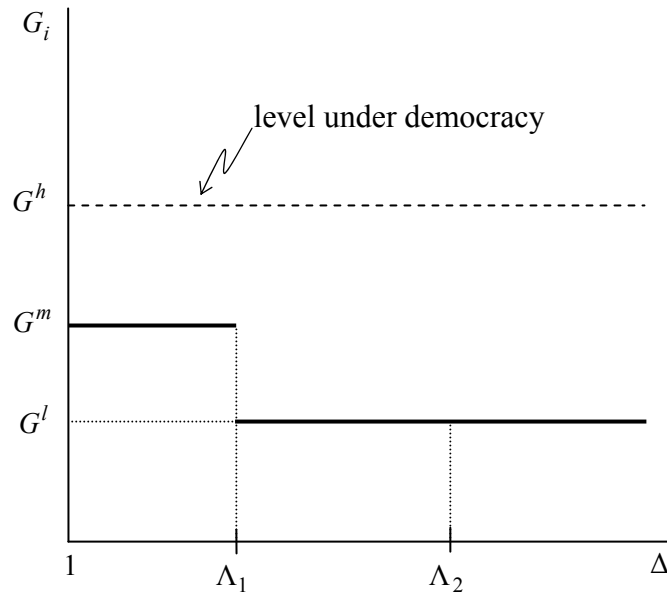
b. Sanctions and democratization

Extension: Heterogeneity and Social Welfare (I)

A slightly modified set-up:

- The citizens are no longer identical but differ in terms of the cost of revolutionary activity. There are two equal-sized (sub-)groups:

  - Sub-group 1: Above-average cost: $A_t(\chi + \gamma)$

  - Sub-group 2: Below-average cost: $A_t(\chi - \gamma)$

- The two groups jointly decide on whether or not to revolt against the ruler and the decisions in this respect are denoted by $\rho_{i,t} \in \{0,1\}$, with 1 indicating a decision in favor

- A revolt materializes if and only if both groups are in favor (i.e., if $\rho_t \equiv \rho_{1,t} \cdot \rho_{2,t} = 1$)

The equilibrium:

- These mild modifications do not change the nature of the equilibrium

- The difference is that χ has to be replaced by $\chi_1 \equiv \chi + \gamma$ in the definitions of Λ_1 and Λ_2

Sanctions and social welfare:

- Suppose that $\Lambda_2 \geq 1$ and denote by $\Sigma(S_t, \Delta)$ the utilitarian social welfare function which takes into account the utility of the citizens

Extension: Heterogeneity and Social Welfare (II)

Sanctions and $\cdots$ (continued):

- Then, implementing $\Delta = \Lambda_2$ (which is exactly sufficient to induce the type-3 equilibrium) leads to

$$\Sigma(R,\Lambda_2) - \Sigma(R,1) = \frac{1}{(1-\beta(1-p))(1-\beta)} \ln\left(\frac{\left[(F^I - \chi_2)/(F^I - \chi_1)\right]^{(1-\beta)/2}}{\left[(F^j / F^I)\Lambda_2\right]^{1-\beta(1-p)}} \right),$$

 whereas $F^j \in \{F^I, F^h\}$ depends on the equilibrium if $\Delta = 1$

Group heterogeneity and social welfare:

- Sanctions may improve social welfare if there is heterogeneity in the "cost of revolutionary activity"

- The intuition is as follows:

  - Trying to oust the ruler requires the consent of both groups – which means that group 1 may dictate a non-challenge equilibrium although group 2 strongly prefers the type-3 equilibrium

  - As a result, the non-challenge equilibrium may show an "inefficiently low" revolutionary activity so that a sanctions-induced switch to the type-3 equilibrium could improve matters

- A positive effect is more likely to materialize if the critical intensity Λ_2 is low

Discussion – Intuition and Comparative-Static Results (III)

Figure 6 – Sanctions intensity and social welfare (with $\Lambda_1 > 1$)

a. With $\Lambda_1 > 1$ *b*. With $\Lambda_1 \leq 1$
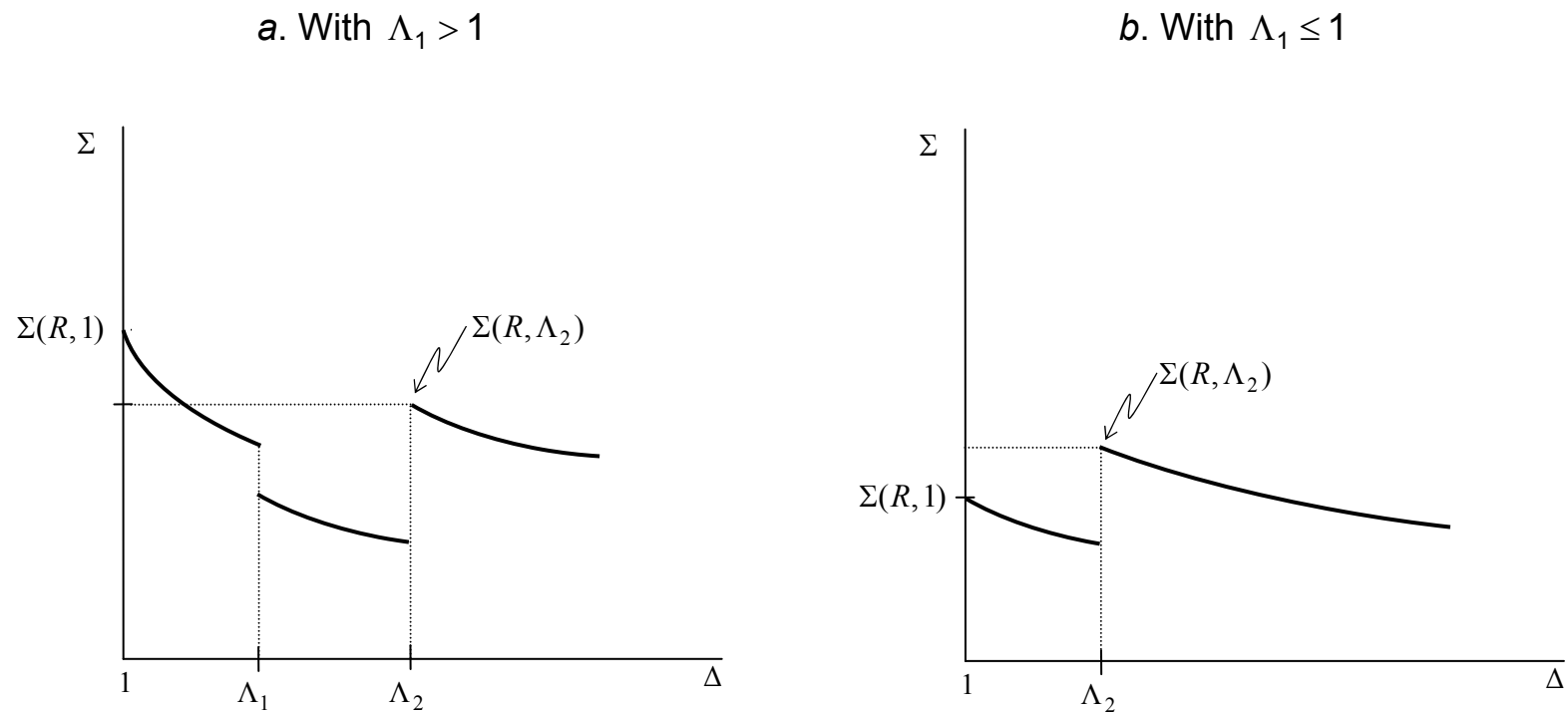
Discussion – Policy Perspective and Conclusions

New perspective on Haiti and Iraq: Through the lens of this model, it appears that the imposed sanctions were · · ·

- ▸ "too weak" to have a destabilizing effect (i.e., were insufficient to fend off the rulers' defense strategies)

- ▸ just sufficient to take the two countries from a type-1 equilibrium to a type-2 equilibrium (in which the citizens where punished twice, through the direct and the indirect effect of the sanctions)

Sanctions intensity: Compromising on an "intermediate" sanctions intensity may be the worst option because · · ·

- ▸ the hardship inflicted on the population may still be huge as a result of the regime's defense strategy but

- ▸ regime change and democratization are not promoted

Sanctions are more likely to work, other things equal, in · · ·

- ▸ more advanced economies (i.e., in autocracies where the state's bureaucratic capacity is higher and the private sector relies more heavily on "modern" technologies)

- ▸ countries with a weaker "repressive capacity", i.e., in places where the cost of revolting is lower and the success probability is higher