

**National Sovereignty in an
Interdependent World**

by

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I. Introduction

What are the sovereign rights of nations in an interdependent world?

To what extent do these rights stand in the way of achieving important international objectives?

- Growing tension between globalization and the preservation of national sovereignty.

Answers difficult.

- National sovereignty is a complex notion.
- Nations interact in increasingly complex and interdependent ways.

In this paper, we propose answers to these two questions.

Approach.

- Develop definitions of sovereignty that capture features emphasized by political scientists.
- Use these definitions to describe the nature of sovereignty absent international agreements.
- Evaluate the extent to which sovereignty is compromised by international agreements with specific design features.

Goals.

- Delineate the degree of tension between national sovereignty and international objectives.
- Describe how that tension can be minimized through institutional design.

Sovereignty Defined.

- Westphalian norm of “non-intervention in the internal affairs of other states.” What is *non-intervention*? What are *internal affairs*?
- Partition government’s unilateral choice problem into *internal affairs* (its payoff is independent of external actors) and *external affairs* (everything else).
- *Intervention* in internal affairs through international agreement: if direct commitments concerning internal affairs, or; if commitments alter normal operation of domestic institutions.

Three key features emphasized by IPE literature.

- International commitments need not violate sovereignty; limits to appropriate subject matter of international agreements; distorting domestic institutions=sovereignty violation.

Results: Benchmark 2-country model.

- General international “externality” variable: trade; common-pool resource; global climate change.
- Unilateral choices can be partitioned into 2 steps: level of externality and contribution to it, given foreign policies; and choice of policies to deliver this contribution.
- First step: external affairs. Second step: internal affairs.
- Bad news. International commitments over internal affairs imply “contamination effect:” sovereignty violations difficult to contain to narrow subsets of policies.
- Good news. Conflict between sovereignty and international efficiency is avoidable: negotiate commitments over the level of externality and each government’s contribution to it.

Results: Extended Models.

- A world of small countries: harmony between sovereignty and international efficiency preserved iff governments disagree over direction the externality variable should move.
- A world of international trade: “externality” variable is terms of trade; each government’s “contribution” is its market access.
 - 2-country world: market access agreements can achieve international efficiency without sacrificing sovereignty. GATT/WTO.
 - Many-country world: MFN market access agreements can achieve international efficiency without sacrificing sovereignty.
- A model with more complicated externalities: inherent conflicts between national sovereignty and international efficiency can easily arise.
 - Trade problems are special.

II. Internal Affairs/Sovereignty: Benchmark

Two countries: home policy instruments i ; foreign policy instruments i^* .

Government objectives:

$$G(i, \tilde{x}(i, i^*)); G^*(i^*, \tilde{x}(i, i^*)).$$

- $\tilde{x}(i, i^*)$ is “externality” variable; defines nature of international interdependence.

Structure: G and G^* globally concave; and

$$(1) f(g(i, x), g^*(i^*, x), x) = 0,$$

where $f_g \neq 0 \neq f_{g^*}$, $g_{i^k} \neq 0$ and $g_{i^*k'} \neq 0$ for some k, k' .

- g is home’s “contribution” to determination of the externality variable x . Similarly, g^* .
- f aggregates g and g^* to determine x according to $f(\cdot) = 0$.

What is Sovereignty?

Westphalian norm: *non-intervention* in the *internal affairs* of other states.

Conventional usage.

- Internal affairs:
 - a government's *authority to determine* its domestic institutions, and
 - to *operate* its institutions to translate citizen preferences into policies.
- Non-intervention by external actors:
 - violated by *coercion* (e.g., war);
 - can be violated by *invitations* (e.g., agreement) which distort or derange normal workings of own system.

Our departures from conventional usage:

- we focus on a government's authority to determine its payoffs (accountability);
- we focus on violations by invitation.

Combines traditional features of Westphalian, Interdependence and Domestic Sovereignty.

Sovereignty Defined

Equate internal affairs of a government with matters in which it has sole authority over payoffs in Nash.

Preliminaries:

- Consider a (valid) *partition* P of a government's best-response policy choice problem into a collection of sub-problems.
- A *choice problem* is an element of P .
- Let \hat{s} be a collection of choice problems contained in \hat{P} ; let \tilde{s} be a collection of choice problems contained in \tilde{P} .
- \hat{s} is *equivalent* to \tilde{s} iff $\{\hat{P} \setminus \hat{s} \cup \tilde{s}\}$ and $\{\tilde{P} \setminus \tilde{s} \cup \hat{s}\}$ are each valid partitions.
- \hat{s} is a *subset* of \tilde{s} iff $\exists \hat{s}'$ and \tilde{s}' s.t. $\{\hat{P} \setminus \hat{s} \cup \hat{s}'\}$ and $\{\tilde{P} \setminus \tilde{s} \cup \tilde{s}'\}$ are valid partitions and every element in \hat{s}' is also in \tilde{s}' .

- First define authority:

Definition: A government has *sole authority* in a choice problem if and only if the determination of its payoff in that choice problem is independent of the actions of “external actors.”

- Next define internal affairs and external affairs, conditional on the partition under consideration:

Definition: For any partition P of a government’s best-response policy choice problem, the government’s *P-internal affairs* are the collection of choice problems in P over which the government has sole authority, and its *P-external affairs* are the remaining choice problems in P .

- Finally, develop an unconditional definition of internal and external affairs.

Definition: A *minimal partition* \hat{P} of a government's best-response policy choice problem is a partition for which the government's \hat{P} -external affairs are a subset of its P -external affairs for all P .

Definition: If there exists a minimal partition \hat{P} of a government's best-response policy choice problem, then the government's *internal affairs* are its \hat{P} -internal affairs and the government's *external affairs* are its \hat{P} -external affairs.

Accordingly, a government's internal affairs consist of the largest collection of choice problems over which it enjoys sole authority in the Nash equilibrium.

Apply to Benchmark Model.

Home best-response policy choice problem:

Program 1: $Max_i G(i, \tilde{x}(i, i^*)),$ given i^* .

Rewrite, using (1):

$$\begin{aligned} &Max_{i, x} G(i, x) \\ \text{s.t.} & f(g(i, x), g^*(i^*, x), x) = 0, \text{ given } i^*. \end{aligned}$$

- According to this partition, the home government's choice problem is its internal affairs iff constraint is non-binding (i.e., $G_x = 0$).
- But different partitions imply different characterizations of internal affairs.

Consider the alternative partition P_0 , **Program 1'**:

$$\begin{aligned} \text{Step 1. } & \text{Max}_i G(i, x) \\ & \text{s.t. } [g(i, x) - g] = 0, \text{ given } (g, x). \end{aligned}$$

$$\begin{aligned} \text{Step 2. } & \text{Max}_{g, x} L(\hat{i}(g, x), g, x) \\ & \text{s.t. } f(g, g^*(i^*, x), x) = 0, \text{ given } i^*; \end{aligned}$$

$\hat{i}(g, x)$ is Step-1 solution, L is Step-1 Lagrangean.

- Step-1 solved conditional on a given level of the “externality” variable x and the home-country’s “contribution” g to it.
 - The home government makes its preferred choices over domestic policy instruments i so as to deliver this contribution.
- In Step-2, the home government makes its preferred choices over g and x subject to the implied constraint placed on its choices by i^* .

Lemma 1: Program 1 and Program 1' are equivalent ways of characterizing the home-government’s best-response policies, and so P_0 is a valid partition.

According to P_0 :

- The home government has sole authority over payoffs in (Step-1) choices over $i(g,x)$
- The home government has sole authority over payoffs in (Step-2) choices over g and x iff $G_x=0$.

Analogous statements for foreign government and partition P_0^* .

Lemma 2: The home government's P_0 -internal affairs are its choices over $i(g,x)$, and also its choices over g and x if and only if $G_x=0$ when evaluated at the Nash policy choices (and similarly for the foreign government).

Lemma 3: The partition P_0 is a minimal partition of the home-government's best-response choice problem, and the partition P_0^* is a minimal partition of the foreign-government's best-response choice problem.

We say governments are *mutually interdependent* when $G_x \neq 0$ and $G_x^* \neq 0$ at the Nash policy choices.

Lemmas 1-3 imply:

Proposition 1: In the benchmark model, the home (foreign) government's choices over $i(g,x)$ ($i^*(g^*,x)$) are its internal affairs. If governments are mutually interdependent, then choices over g and x (g^* and x) represent the external affairs of the home- (foreign-) government.

Note: the choices made by the home (foreign) government in matters that concern its internal affairs, namely $\hat{i}(g,x)$ ($\hat{i}^*(g^*,x)$), reflect

- the underlying preferences of the citizens of that country, and
- the normal operation of the domestic institutions under which those preferences are translated into choices over policy instruments.

In light of Proposition 1, we now define external intervention as it relates to international agreements.

We say that the internal affairs of a government are *subjected to external influence* by an international agreement if and only if:

- (i) the government makes commitments in that agreement over matters that concern its internal affairs; and/or
- (ii) the agreement has the effect of altering the choices in any choice problem that concerns the internal affairs of the government.

We say that a government's *sovereignty is violated by an international agreement* when:

- its internal affairs are subjected to external influence by that agreement.

Three key features emphasized by IPE literature.

- International commitments need not violate sovereignty; limits to appropriate subject matter of international agreements; distorting domestic institutions=sovereignty violation.

III. Sovereignty, Agreements and Efficiency

After negotiations, each government chooses its best-response policies unilaterally

- given the policies of the other government, and
- subject to any negotiated constraints.

Violations of sovereignty.

- Direct violation: sovereignty over a policy instrument in $i(g,x)$ or $i^*(g^*,x)$ is *violated directly* by an international agreement when limits on this instrument directly negotiated.
- Indirect violation: sovereignty over a policy instrument is *violated indirectly* when not violated directly but the unilateral policy choice differs from the corresponding element of $\hat{i}(g,x)$ or $\hat{i}^*(g^*,x)$ evaluated at the (g,x,g^*) implied under the agreement.

Sovereignty over a policy instrument is *violated (preserved)* when its sovereignty is violated directly or indirectly (neither directly nor indirectly).

The “contamination effect.”

- Direct violations induce indirect violations.
- International commitments over matters that concern the internal affairs of a government are likely to cause collateral violations of its sovereignty by introducing further distortions into the normal workings of its own system.

Proposition 2: An international agreement that specifies levels for a subset of the elements of $i(g,x)$ and $i^*(g^*,x)$ must, for each government, violate that government’s sovereignty over at least as many policy instruments as it preserves, provided that:

- (i) the agreement specifies at least one policy instrument for each government at a level different from its best-response level; and
- (ii) all policies are interrelated.

Is the efficiency/sovereignty tradeoff inevitable?

International efficiency frontier:

Program 3:
$$\begin{aligned} & \text{Max}_{i, i^*, x} G(i, x) \\ \text{s.t. (i)} & G^*(i^*, x) \geq \bar{G}^*, \text{ and} \\ & \text{(ii) } f(g(i, x), g^*(i^*, x), x) = 0. \end{aligned}$$

Proposition 3: The Nash equilibrium of the benchmark model is inefficient if and only if governments are mutually interdependent.

Proposition 4: If the Nash equilibrium is inefficient, then by negotiating commitments over g, x and g^* , the home and foreign government can achieve efficiency without violating their sovereignty.

After negotiations over g, x and g^* , home (foreign) solves Step 1 of Program 1' (1*'). Hence, negotiations solve:

Program 4:
$$\begin{aligned} & \text{Max}_{g, x, g^*} L(\hat{i}(g, x), g, x) \\ \text{s.t. (i)} & L^*(i^*(g^*, x), g^*, x) \geq \bar{L}^*, \\ & \text{and} \\ & \text{(ii) } f(g, g^*, x) = 0. \end{aligned}$$

Does Proposition 4 extend to small-country world ?

Two important changes for representative countries:

- Nash policy choices solve $G_{i,k}=0$ for $k=1,\dots,I$.
- The minimal partition of home best-response policy choice problem is **Program S**:

Step 1. $\text{Max}_{i^j} G(i^j, x)$, given x .

*Step 2. $\text{Max}_x Z(\hat{i}^j(x), x)$
s.t. $f(g(i^j, x), g^*(i^*, x), x) = 0$, given (i^j, i^*) .*

Lack of authority over x now extreme. But g no longer external affair. So negotiations over g violate sovereignty.

Proposition 5: If governments are mutually interdependent and all countries are small in relation to the externality variable x , attaining international efficiency is consistent with maintaining national sovereignty iff $\text{sign}[G_x] \neq \text{sign}[G_x^*]$ when evaluated at the Nash policy choices.

IV. Sovereignty and the GATT/WTO

2-country 2-good general equilibrium trade model.

Policy instruments: $\mathbf{i} \equiv [\mathbf{r} \quad \tau]$; $\mathbf{i}^* \equiv [\mathbf{r}^* \quad \tau^*]$.

Prices: $p = \tau p^w \equiv p(\tau, p^w)$; $p^* = p^w / \tau^* \equiv p^*(\tau^*, p^w)$.

Balanced Trade:

$$(8) \quad p^w M(\mathbf{r}, p, p^w) = E(\mathbf{r}, p, p^w),$$

$$(9) \quad M^*(\mathbf{r}^*, p^*, p^w) = p^w E^*(\mathbf{r}^*, p^*, p^w).$$

Market Clearing:

$$(10) \quad M(\mathbf{r}, p(\tau, p^w), p^w) = E^*(\mathbf{r}^*, p^*(\tau^*, p^w), p^w).$$

Government Objectives: $W(\mathbf{r}, p, \tilde{p}^w)$; $W^*(\mathbf{r}^*, p^*, \tilde{p}^w)$.

$$(11) \quad W_{\tilde{p}^w}(\mathbf{r}, p, \tilde{p}^w) < 0 \text{ for } M(\mathbf{r}, p, \tilde{p}^w) > 0, \text{ and} \\ W_{\tilde{p}^w}^*(\mathbf{r}^*, p^*, \tilde{p}^w) > 0 \text{ for } M^*(\mathbf{r}^*, p^*, \tilde{p}^w) > 0.$$

$$(11a) \quad W_{\tilde{p}^w}(\mathbf{r}, p, \tilde{p}^w) = 0 \text{ for } M(\mathbf{r}, p, \tilde{p}^w) = 0, \text{ and} \\ W_{\tilde{p}^w}^*(\mathbf{r}^*, p^*, \tilde{p}^w) = 0 \text{ for } M^*(\mathbf{r}^*, p^*, \tilde{p}^w) = 0.$$

2x2 Trade Model a Special Case of Benchmark.

$$G(\mathbf{i}, \tilde{p}^w) \equiv W(\mathbf{r}, p(\tau, \tilde{p}^w), \tilde{p}^w).$$

$$G^*(\mathbf{i}^*, \tilde{p}^w) \equiv W^*(\mathbf{r}^*, p^*(\tau^*, \tilde{p}^w), \tilde{p}^w).$$

$$m(\mathbf{i}, p^w) \equiv M(\mathbf{r}, p(\tau, p^w), p^w).$$

$$m^*(\mathbf{i}^*, p^w) \equiv M^*(\mathbf{r}^*, p^*(\tau^*, p^w), p^w).$$

Substitute (9) into (10) to rewrite market-clearing:

$$(12) \quad p^w m(\mathbf{i}, p^w) - m^*(\mathbf{i}^*, p^w) = 0.$$

(12) is a special case of (1) in which:

- $x \equiv p^w$;
- $g(\mathbf{i}, x) \equiv m(\mathbf{i}, p^w)$, $g^*(\mathbf{i}^*, x) \equiv m^*(\mathbf{i}^*, p^w)$; and
- $f(g(\mathbf{i}, x), g^*(\mathbf{i}^*, x), x) \equiv [xg(\mathbf{i}, x) - g^*(\mathbf{i}^*, x)]$.

The minimal partition of the home best-response policy choice problem, **Program 1' (Trade)**:

$$\begin{aligned} \text{Step 1. } & \text{Max}_i G(\mathbf{i}, p^w) \\ & \text{s.t. } [m(\mathbf{i}, p^w) - m] = 0, \text{ given } (m, p^w). \end{aligned}$$

$$\begin{aligned} \text{Step 2. } & \text{Max}_{m, p^w} L(\hat{\mathbf{i}}(m, p^w), m, p^w) \\ & \text{s.t. } [p^w m - m^*(\mathbf{i}^*, p^w)] = 0 \text{ given } \mathbf{i}^*; \end{aligned}$$

$\hat{\mathbf{i}}(m, p^w)$ is Step-1 solution, L is Step-1 Lagrangean.

Market access interpretation of negotiations over m, p^w and m^* which hold governments to policies satisfying $[m(\mathbf{i}, p^w) - m] = 0, [m^*(\mathbf{i}^*, p^w) - m^*] = 0$.

Proposition 6: A market access agreement can achieve the international efficiency frontier without violating the sovereignty of any government.

Note. Harmony between national sovereignty and international efficiency survives in a world of (all) small countries:

- governments *disagree* in Nash over the direction they would like \tilde{p}^w to move.

MFN and Sovereignty in a 3-Country Trade Model

Policy instruments: $\mathbf{i} \equiv [\mathbf{r} \ \tau^1 \ \tau^2]$; $\mathbf{i}^{*j} \equiv [\mathbf{r}^{*j} \ \tau^{*j}]$.

Prices: $p = \tau^j p^{wj} \equiv p(\tau^j, p^{wj})$; $p^{*j} = p^{wj} / \tau^{*j} \equiv p^{*j}(\tau^{*j}, p^{wj})$.

Linkage: $p^{w1} = [\tau^2 / \tau^1] p^{w2}$.

- Multilateral terms of trade T .
- MFN ($\tau^1 = \tau^2 \equiv \tau$) implies $p^{w1} = p^{w2} \equiv p^w$.

Balanced Trade:

$$(14) \quad T \cdot M(\mathbf{r}, p, T) = E(\mathbf{r}, p, T), \text{ and}$$

$$(15) \quad M^{*j}(\mathbf{r}^{*j}, p^{*j}, p^{wj}) = p^{wj} E^{*j}(\mathbf{r}^{*j}, p^{*j}, p^{wj})$$

Market Clearing: Linkage plus

$$(16) \quad M(\mathbf{r}, p, T) = \sum_{k=1,2} E^{*k}(\mathbf{r}^{*k}, p^{*k}, p^{wk}).$$

Government Objectives: $W(\mathbf{r}, p, T)$; $W^{*j}(\mathbf{r}^{*j}, p^{*j}, \tilde{p}^{wj})$.

$$(17) \quad W_T(\mathbf{r}, p, T) < 0 \text{ for } M(\mathbf{r}, p, T) > 0, \text{ and} \\ W_{\tilde{p}^{wj}}^{*j}(\mathbf{r}^{*j}, p^{*j}, \tilde{p}^{wj}) > 0 \text{ for } M^{*j}(\mathbf{r}^{*j}, p^{*j}, \tilde{p}^{wj}) > 0.$$

Home best-response policy choice problem:

Program 5: $Max_i W(\mathbf{r}, p(\tau^j, \tilde{p}^{wj}), T)$, given i^{*1}, i^{*2} .

Consider the alternative partition, **Program 5'**:

Step 1. $Max_{\mathbf{r}, p} W(\mathbf{r}, p, T)$

s.t. $[M(\mathbf{r}, p, T) - M] = 0$, given (M, T) .

Step 2. $Max_{M, p^{w1}, p^{w2}} Y(\hat{\mathbf{r}}(M, T(\cdot)), \hat{p}(M, T(\cdot)), M, T(\cdot))$

s.t. $[M - \sum_{k=1,2} E^{*k}(\mathbf{r}^{*k}, p^{*k}(\tau^{*k}, p^{wk}), p^{wk})] = 0$ given i^{*1}, i^{*2} .

Note: T is determined for given i^{*1} and i^{*2} once p^{w1} and p^{w2} are determined.

Lemma 4: Program 5' describes a minimal partition of the home-government's best-response choice problem defined by Program 5.

According to Lemma 4:

- the external affairs of the home government are its choices over M , p^{w1} and p^{w2} (and by implication T);
- the internal affairs of the home government are its choices over $r(M,T)$ and $p(M,T)$.

The MFN rule:

- requires $\tau^1 = \tau^2 \equiv \tau$ and hence $p^{w1} = p^{w2} = T \equiv p^w$,
- but leaves τ and therefore p unrestricted.

Therefore, the MFN rule

- places restrictions on the home government's external affairs (its Step-2 choices),
- but places no restrictions nor introduces any distortions in the home government's internal affairs (its Step-1 choices).

Proposition 7: Abiding by the non-discrimination rule does not violate national sovereignty.

Suppose $\ast 2$ is a region of small countries.

To preserve sovereignty, representative $\ast 2$ country must be allowed to choose best-response policies:

$$(18) \quad W_{p^{\ast 2}}^{\ast 2} = 0 \text{ and } W_{r_i^{\ast 2}}^{\ast 2} = 0 \text{ for } i = 1, 2, \dots, R^{\ast 2}.$$

Is (18) compatible with international efficiency?

Proposition 8: An international agreement can attain a point on the international efficiency frontier and satisfy (18) if and only if it satisfies MFN.

The associated home and $\ast 1$ policies must satisfy:

$$(19) \quad W_p = 0 = W_{p^{\ast 1}}^{\ast 1}, \text{ and} \\ W_{r_i} = 0, \quad i = 1, 2, \dots, R; \quad W_{r_i^{\ast 1}}^{\ast 1} = 0, \quad i = 1, 2, \dots, R^{\ast 1}.$$

Non-discriminatory politically optimal market access agreements are market access agreements that achieve the market access levels implied by (18), (19) and the MFN restriction.

Proposition 9: If some (but not all) countries are small, then an efficiency/sovereignty tradeoff can be avoided iff governments negotiate a non-discriminatory politically optimal market access agreement.

The sovereignty of small countries can be preserved under an internationally efficient agreement only if that agreement abides by the MFN requirement.

- A non-discrimination rule is “complementary” to preserving the national sovereignty of small countries.

Potentially important implications for the design of the WTO. Departures from focus on

- MFN (e.g., GSPs, FTAs and Cus)
- market access agreements (e.g., SCM and TRIPs Agreements, competition policy)

may pose a direct and indirect – and in principle, unnecessary – threat to sovereignty.

V. Sovereignty and Agreements more Generally

A simple extension of the benchmark model.
Government objectives: $G(i, \tilde{x}(i, i^*)); G^*(i^*, \tilde{y}(i, i^*))$.

$\tilde{x}(i, i^*)$: level of air pollution; flows from “upwind” foreign country (who is therefore unaffected) to “downwind” home country (who is affected).

$\tilde{y}(i, i^*)$: level of water pollution; flows from “upstream” home country (who is unaffected) to “downstream” foreign country (who is affected).

$\tilde{x}(i, i^*)$ and $\tilde{y}(i, i^*)$ defined implicitly according to $f(g(i, x), g^*(i^*, x), x) = 0; c(q(i, y), q^*(i^*, y), y) = 0$.

Home (foreign) external affairs do not include q and y (g^* and x). Respecting sovereignty implies failure to achieve efficiency in this setting.

Proposition 10: The harmony between sovereignty and international efficiency that in principle exists when the interdependence between countries takes the form of trade does not necessarily carry over to other forms of interdependence across countries.

VI. Conclusion

What are the sovereign rights of nations in an interdependent world?

- In a world of large countries whose interdependence is of a pecuniary nature: Everything but their market access choices.
- Small countries different: their sovereign rights extend to their market access choices.
- General interdependence: sovereign rights extend to everything that a government cares about except externality variables and its contribution to them.

To what extent do these rights stand in the way of achieving important international objectives?

- Trade: They don't have to; Non-discriminatory, politically optimal market access agreements hold the key.
- Non-pecuniary externalities: Conflict likely.