

I. Questions Olson Seeks To Answer

- A. Central Q: What causes rise & decline in pol.-economic performance?
- B. Capital accumulation, technological advance, etc. *sources* not causes
- C. Ancillary questions (examples):
 - 1. Involuntary unemployment?
 - 2. Ungovernability?
 - 3. Top-heavy societies?
 - 4. Class-structure rigidity? & its cross-country/time variation?
- D. Alternative Explanations:
 - 1. Catch-Up Hypothesis
 - 2. Small-Government Hypothesis

II. Standards for Theory (Olson)

- 1. No *Ad Hocery* => explanation fits some data or observations beyond those from which it was derived. N=1 problem.
- 2. High Power & Parsimony: explain as much with as little as possible
- 3. Consilience (*William Whewell*): explains facts of quite diverse kinds
- 4. Specify what sorts of obs. would increase or decrease confidence correct
 - a. No one theory should explain everything:
 - b. No such thing as a critical case
 - c. Positive statements include *ceteris paribus* (all-else equal) proviso
 - d. Predictive statements are probabilistic: conditions that make outcomes more or less likely to occur, *ceteris paribus*

III. Building & Empirically Evaluating Positive Theory (Franzese)

A. *Systematic & stochastic* components of world

1. Positive theory about the systematic part
2. => always *cet. par.*, probabilistic, and w/o critical cases or proper nouns

B. *Probabilistic relationships between variables*: some features, X, that make some outcome, Y, more or less *likely* to occur or that *tend* to increase or to decrease the amount of Y occurring.

1. Probabilistic => Speak of likelihoods, tendencies, fertile ground, *etc.*
2. ... => Not generally interested in particular event (random or fixed) but environmental features that make outcome more or less likely (systematic)
3. Relationships: not about predicting *per se*, but rather about how some X (set of X's) *relates* to Y (or doesn't): "X 8" tends to make "Y 89..."
4. Simplifications: (theory or model, not description or photograph)
 - a. No claim X's highlighted everything or even most important to Y.
 - b. No intention of explaining everything about Y (partly random).

C. Conceptualization and Hypothesizing

1. $Y = f(X_1, X_2, X_3, \dots, X_k, g, \textcircled{a})$ where X_1 to X_k are the systematic part(s) (independent variable(s)) and the g or the \textcircled{a} random part(s) and/or part(s) we omit of the thing we're trying to explain (dependent variable(s)). Theorized relationships: +/- over each X_i (sign derivatives)
2. Arrow Diagrams, Tables, and/or Games
3. Identify alternative and counter-hypotheses (specific better)

D. Operationalization and Measurement

1. Operationalization: Theories at fairly abstract level of generality; must relate abstract theoretical concepts to empirically observable counterparts
2. Measurement: Everything can be measured at minimum present/not-present basis, then

ranking, or index, or direct cardinal measurement:

- a. Imperfect measures better than none.
 - b. Cannot make positive statements about the world without having made, explicitly or implicitly some measurement. (Explicit always better.)
3. “Your operationalization and measurement must be theoretically informed so that your empirical evaluation might be theoretically informing.”

E. Empirical Evaluation

1. Intuition of empirical evaluation: examining whether, historically, evidence aligns with your theoretical expectations more than likely simply by chance
2. Common Techniques: 2x2 table, scatter plots & graphs, regression analysis.

F. Reconsider Theory in Light of Evidence

IV. The Logic of Collective Action (Chapter 2)

A. Summary:

1. Collective-Action Problem: (CAP)
 - a. *Ceteris Paribus*, large groups composed of rational individuals will *not* act in their group interest (p. 18).
 - b. Many/Most services of associations are public goods to their members
 - c. *Public Good*: (DEF) a good that, provided to anyone, goes to everyone
 - d. *Example Associations*: union, bus. assn, firm, farm org, cartel, lobby
 - e. Public good generates little or no incentive for individual to contribute to its production => large groups often fail to act in their group interest
2. Value to members alone cannot explain govts & other collective agencies.
3. Two main ways such associations circumvent the collective-action problem:
 - a. *Coercion (EXAMPLES)*:
 - b. *Selective Incentives (DEFINE, EXAMPLES)*: Positive and Negative

4. Factors Which Exacerbate or Ameliorate Collective Action Problem (CAP)

- a. Dense *social interaction* among (potential) grp members facilitates pos. (companionship, approval) & negative (ostracism, censure) sel. incent.
 - (1) => works best in *small groups*
 - (2) => *federal structure* of larger grp advantageous
- b. *Heterogeneity* among the members exacerbates the CAP:
 - (1) => 8 diff. of consensus
 - (2) => 8 emasculates social mechanisms
 - (3) In very small groups, heterogeneity may 8 value of joining grp (why?) but more generally a hindrance
- c. Anything that 8 (9) *consensus*, 8 (9) CAP difficulty (IDEAS?).
- d. *Indoctrination* and *selective recruitment* often used to keep consensus high and heterogeneity low

5. Information and calculation about public good is itself a public good

- a. If it doesn't pay to act, it usually won't pay to be informed about how to act ==> *rational ignorance*; e.g., rationally ignorant voter
- b. *Why are some informed then?*
 - (1) Intrinsic interest
 - (2) Some rewarded for informed (pol's, lobb's, journ's, soc. sci.'s)
 - (a) b/c being informed is rare by rational-ignorance logic or o/w
 - (b) b/c laws created to grant private benefits to info-gatherers
- c. *Disparity of localized costs & wide-spread benefits of information (or vice versa) explains:*
 - (1) Lobbies: they produce a public good in information gathering and dissemination, retain influence b/c voters rationally ignorant
 - (2) Sensationalist News
 - (3) Tax Codes, specifically disparity b/w broad outlines and details
 - (4) *Suggests that large, conspicuous decisions ruled by median voter; details & complexities by lobbies/special-interests*

6. Two exceptions to the CAP

- a. *If grp very small, may pay individual to unilaterally provide public good*
- b. *If grp very small, may sustain cooperation through iterated PD logic*

B. The Logic of Collective Action Succinctly Summarized: *“The larger the number of individuals or firms that would benefit from a collective good, the smaller the share of the gains from action in the group interest that will accrue to the individual or firm that undertakes the action. Thus, in the absence of selective incentives, the incentive for group action diminishes as group size increases, so that large groups are less able to act in their common interest than small ones”* (p. 31).

C. Some Preliminary Extensions and Implications:

1. Differences in group-member size, or more precisely, in amount different members willing to pay for marginal amounts of collective good also central, explain, e.g., “exploitation of great by small” [DEF, EX]
2. Costs of negotiating group’s action also likely increasing in group size
3. **(Key Implication) Ceteris paribus, small groups have more collective action per capita than large ones**
4. Intensity + group size => small grp zealots more likely to act for collective gain than large group w/ equal total willingness to pay for cause [EX]

V. Three Ways to Understand Logic of Collective Action in More Detail

A. The CAP as an Externality: simple CAP with N equal-sized individuals

1. Cost of providing good, C, some function, $f(Q)$, of provision level, $T \Rightarrow C=f(T)$; (let $f' > 0$ & $f'' < 0$; i.e., production is costly; diminishing costs)
 - a. Value of good to each individual, V_i , equals provision level $\Rightarrow V_i=T$
 - b. Value of good to whole group, V_g , is $\hat{=}$ N times that $\Rightarrow V_g = N \cdot V_i = N \cdot T$
2. If grp could act as unit: maximize grp net benefit: $V_g - C = V_g - f(T) = N \cdot T - f(T)$
 - a. $\text{Max}_T N \cdot T - f(T)$: Setting derivative equal w.r.t. to choice var, T, to zero
 - b. $d[N \cdot T - f(T)]/dT = 0 \Rightarrow N - f'(T) = 0 \Rightarrow N = f'(T)$

- c. *I.e.*, grp acting as unit invest in public good until more provision & total cost ($f'(T)$) exactly as much as extra goods worth to (whole) group (N).
3. If grp can't act as unit; rather every individual free to (must) act solo: each individual maximizes her/his own net benefit: $V_i - C = V_i - f(T) = T - f(T)$
- $\text{Max}_T T - f(T)$
 - $d[T - f(T)]/dT = 0 \implies 1 - f'(T) = 0 \implies 1 = f'(T)$
 - I.e.*, each extra unit of public good individual produces brings her/him 1 unit greater value. S/he ^ contributes until cost of +1 unit is exactly 1
4. Conclusion: (given $f''(T) < 0$), T such that $f'(T) = N$ is more than N times T such that $f'(T) = 1$. *I.e.*, group as unit would provide more than sum of N individuals would choose to provide solo.
- Loosely: individuals stop giving N times sooner than grp acting as unit.
 - I.e.*, severity of CAP increases w/ grp size: 8NY 9 individ. contribution relative to grp optimum: **more CAP per capita in small grps.**
5. CAP as an externality:
- Individuals self-interested \implies value of giving to cause is return to self
 - Total contribution of grp cause to each individual is not just gain brings her/him, but also gain brings everyone else in grp (public good \implies one's enjoying it does not diminish others' enjoyment).
 - \implies disparity b/w value to individual and to grp of individual contribution
 - Individual values his contribution less than optimal from grp viewpoint, so individual does not invest group-optimally in the public good
 - In short: the public good (collective action) is under-provided.

B. CAP as a "free-rider problem", modeled game-theoretically.

1. Classic Prisoners' Dilemma (PD)

Prisoner B 6 Prisoner A 9	Confess	Stay Silent
Confess	(A gets 10 years, B gets 10 years)	(A goes free, B gets 20 years)

Stay Silent	(A gets 20 years, B goes free)	(A gets 5 years, B gets 5 years)
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- a. *Equilibrium*: each player's strategy is best response to other(s)'s strategy
- b. *PD*: each finds confess optimal, but joint silence could bring 2nd best
- c. Logic of CA as a (multi-player) PD:
 - (1) If others contributing, don't bother b/c good will be provided
 - (2) If others not contributing, don't bother b/c can't provide it solo
 - (3) => One equilibrium: no one pays (. most don't, or most under-)
 - (4) With fewer players, it's less like PD...

2. Logic of CA as Battle of the Sexes Game:

- a. contribution by *either* suffices
- b. each prefers pay/good to no-pay/no-good

Prisoner B 6 Prisoner A 9	Contribute	Free-Ride
Contribute	(Good provided, A & B pay)	(Good provided, A pays)
Free-Ride	(Good provided, B pays)	(Good not provided, A & B don't pay)

- c. Two eqba: A pays or B pays, but B likes former and A likes latter better
- d. => CA more likely to happen, but some hard bargaining over who pays

3. Logic of CA as a Coordination Game:

- a. Each prefers pay/good to no-pay/no-good
- b. Contribution by *both* required
- c. Two eqba: both pay, and both don't pay, but both like former better
- d. CA very likely to occur: simply must both understand game, be rational, and be assured others understand & rational: *No conflict of interest*

Prisoner B 6 Prisoner A 9	Contribute	Free-Ride
Contribute	(Good provided, A&B pay)	(Good not provided, A pays)
Free-Ride	(Good not provided, B pays)	(Good not provided, A&B don't pay)

4. Exploitation of Great by Small:

- a. Contribution by one necessary but A prefers (no pay, no good) to (pay, good) while B prefers (pay, good) to (no pay, no good)

Only 1 eqbm: A has "dominant strategy," & B an optimal response to it.

- b. "Exploitation of the big by the small": here, of who *really* wants good by less adamant. In CA game, can also be of large by small (b/c large receives more of coll. benefit may pay to provide unilaterally. If so, small benefits w/o paying.

Prisoner B 6 Prisoner A 9	Contribute	Free-Ride
Contribute	(Good provided, A&B pay)	(Good provided, A pays)
Free-Ride	(Good provided, B pays)	(Good not provided, A&B don't pay)

5. Games illustrate and intuition: CA easier to achieve (& more likely to be more effective) in small groups than in large groups.

C. Anecdotal Illustrations of Logic of CA (Olson, pp. 32-34):

1. Different size grps, same net gain CA (=>smaller grps more CA per capita):

- a. 1000 ind's gain \$1 each if organize effectively in CA costing \$100 total

(1) If each gave \$0.10, they each gain \$0.90 net, so grp likes it

(2) But, suppose 999 people gave \$0.10 & 1 refused. Each of other 999 individually has incentive to give the \$0.10 left, still netting \$.80, so hold-out should reasonably expect to get full \$1 for self. But, others could refuse too b/c rest should still make it up. etc. etc. Unravels all the way back => everyone giving not an eqbm.

(3) From other direction: any 100 people could give \$1 to CA. These 100 break even; other 900 gain \$1 each. Could be eqbm, but 100 don't care, give or no. If any 1 dislikes at all doing all the giving, then s/he will quit. Then pays noone to give, so unravels to zero.

(4) On other hand, also pays any of 900 free-riders to pay possible quitter \$0.01 to keep

contributing, so maybe CA occurs.

(5) CA difficult: always in interest of everyone to free-ride, either (a) expecting some in other 999 to give difference as in their interest or (b) it doesn't matter because CA isn't going to happen anyway.

b. \$1,000 at stake; cost of nec. CA still \$100, but now grp is 5 lrg firms

(1) Each firm gains \$200 if CA undertaken, so any one willingly to foot the whole bill her/himself if s/he must.

(2) CA still not certain b/c fight over who pays how much, but obviously much easier for smaller grp (of firms) even though size of prize and cost of obtaining it has not changed.

2. Same grp size, prize, and cost, different divisions of grps into jurisdictions: smaller jurisdictions will exhibit greater CA per capita than larger

a. \$1000 prize, \$100 CA cost, 1000 small firms, but now compare 1000 unorganized firms, scattered all over country, and 1000 firms organized by industry into lobbies of 200 firms in each of 5 industries.

b. 1000 unorganized firms must agree to give \$100 total somehow: hard

c. Or 5 lobbies must give \$100 total: much easier.

3. Differences in intensity of preference:

a. 25 people, valuing CA at \$1000 each might seem less powerful potential force than 25,000, each valuing denial of that proposal \$1.50.

b. Logic of CA suggests former group may prove more powerful despite latter's numbers & despite denial being more valuable to society:

(1) Suppose participation in CA costs \$100 each (e.g., CA-er's would picket somewhere for a while and ½ day pay)

(2) Suppose moving to promote denial of CA would only cost \$2 (e.g., paper, pen, time, & stamp on letter denouncing picketers).

(3) Smaller grp will act, larger one will not.

(4) LofCA works against numbers advantages of larger grps, even in democracy & prob. if anything more so in less democratic

D. Summary: smaller groups disproportionately represented in collective actors: (does *not* mean smaller groups always win, but they have more influence than numbers alone would indicate b/c they are more effective collective actors)

VI. Implications of the Logic of Collective Action (Olson, chpt. 3)

A. **No countries will obtain symmetrical organization of all grps w/ common interest & thereby obtain optimal outcomes through comprehensive bargaining** [More a normative than a positive implication.]

1. *Pluralism*

- a. In principle, if every group that had some interest in any policy or outcome brought weight of that interest into full bargaining over all possible policies and outcomes, then society would in fact achieve an efficient outcome wherein net interests of the whole were maximized.

2. *Coase Theorem*

- a. In principle, grps & individuals free to bargain & reach side-payments. So, in every instance, party that values some outcome more than others oppose can always pay the opposition sufficiently.

3. *LoCA*: impossible that all groups equally well-organized to press interests.

- a. Large interest grps like consumers, tax-payers, unemployed, poor under-represented relative to aggregate weight of their interests while smaller groups over-represented. (Again, smaller not always win, but *relative* wt greater than implied by numbers or even by total willingness-to-pay.)
- b. The over-represented (smaller) grps could just oppose each other to zero each other's advantages, leaving relative effective wt of all interests unaffected by CAP, but that seems exceedingly unlikely.

B. **Stable societies with unchanged boundaries tend to accumulate more collusions and organizations for collective action over time.**

1. This + D keys to much that follows.

2. Organization of (esp. sustained) collective-action takes time:

- a. Select incent's & some way of administering must be devised or evolve,
- b. Once established, though, organizations that enable CA easier to sustain,

3. Thus, unless some great social, political, or economic upheaval...

- a. ... breaks repeating patterns of interaction that facilitate social selective incentives (e.g.,

companionship, approval, censure, ostracism),

- b. ...or actually physically destroys or dismantles or otherwise disrupts the organizations of more formalized CA groups,
 - c. ... or otherwise disrupts process of newly organizing for collective action or maintaining existing organization,
4. Societies accumulate increasing numbers of “collusions” over time, each acting to pursue their own small-group interests

C. Members of small grps have disproportionate organizational power for CA; this disproportion diminishes over time but does not disappear.

1. Disproportion diminishes b/c more of all possible grps organize over time
2. Last to begin to organize are those hardest to form, i.e. the larger ones.

D. On balance, special-interest organizations and collusions reduce efficiency & aggregate income in societies in which they operate & make political life more divisive. [This + B is key to empirical bite of LoCA: pp. 41-47.]

1. Two options for any grp seeking gains for members: δ pie to divide or δ share of pie accruing to grp. Smaller grps will almost invariably prefer latter
 - a. Example: Lobby for law that will improve efficiency of production in society by 1% of GDP (e.g., greater educational expenditure) or lobby for law that will shift 1% of GDP from rest of society to grp (e.g., 1% income-tax cut funded by decreased public education).
 - (1) Gains from former accrue to all society equally, gaining grp $F \times 1\%$ of GDP) where F is grp's size relative to whole country (i.e., its share of the total output).
 - (2) Gains from latter will all accrue to grp, gaining it full 1% of GDP.
 - (3) Redistribution of latter sort tends to shrink pie (why?). Generally, pie must decrease lot before grp pursue broader policy. Smaller the grp γ more pie-dividing appealing relative to pie-growing.
 - b. Example: invest in δ productivity or form cartel. Productivity gains leak outside small grp some but gains from cartel (at costumers' expense) accrue only to members γ grps over-pursue cartel rel. to social optimum
2. Plus, these societal costs tend to build on themselves: b/c newly won policy makes being in grp seem more valuable to ind's than to society γ resources diverted from productive uses into trying to enter now-favored grp.

3. About only force operating against this negative impact: some grps against others so nullifying each other. Even so, resources spent in this competition not spent productively, so competing grps detrimental to national efficiency
4. Plus, all this emphasis on pie-splitting over pie-growing creates winners & losers not win-win, which of course tends to δ political divisiveness
5. Finally, predominantly these smaller, typically redistributive and therefore counterproductive groups, are those increasing in number as time goes on.

E. Encompassing org's have some incentive to make society in which they operate more prosperous, & incentive to redistribute income to members w/ as little excess burden possible, & to cease redistribution unless amount redistributed is substantial in relation to social cost of redistribution.

1. δ pie-size or redistribute it: As grp encompasses more of total, interests align more w/ whole society, esp. as to δ aggregate productivity.
2. Plus, redistribution, given size of group, must represent larger share of all output & so will have larger aggregate-productivity costs.
3. γ encompassing grps less inclined to redistribute.
4. EX: Some countries' (e.g. Austria) labor & employer org's encompassing γ more actively concerned w/ national economic efficiency relative to income redistribution from capital to labor or labor to capital, i.e. insofar as these inconsistent. Quite different from what expect where labor & employer org's much smaller, less encompassing grps (e.g. US & UK).
5. EX: Political parties quite encompassing, esp. where few parties (e.g. US)
 - a. Each party favors redistributing to its constituents, but such large fractions of whole ($\frac{1}{2}\pm$) that δ agg. efficiency quite important too.
 - b. But remember *rational-ignorance* problem: If parties represent the much smaller subset of informed, interested, and motivated constituents, then much less encompassing.

F. Distributional coalitions make decisions more slowly than the individuals and firms of which they are comprised... [more to this, but this key for us]

1. Straightforward: takes N-actor grp longer to decide than N to decide alone
2. Main implication: societies more encumbered with numerous collusions react more

slowly to any sort of shock than those less encumbered.

G. Distributional coalitions retard societal capacity to adopt new technologies and to reallocate resources in response to changing conditions, and thereby reduce the rate of economic growth. [central empirical conclusion.]

1. Distrib. coal's reduce output by diverting resources from productive (pie-growing) to unproductive (pie-splitting) [point D]: a one-off loss of output,
2. Plus number of groups doing so \uparrow over (stable) time [point B], which implies growing one-off losses manifesting as \uparrow growth,
3. Plus less output today mean less investment & so less growth
4. Plus group lethargy [point F] implies that they sap society's natural ability to capitalize on opportunities / avoid pitfalls and \uparrow growth in that way too!

H. Distributional coalitions, once big enough to succeed, are exclusive and seek to limit the diversity of incomes and values of their members.

1. Fairly obvious: any cartel, for example, seeks to exclude other firms from entering its domain (or monopoly: think Bill Gates)
2. From an economic point of view, this part of problem too. Competition and potential competition of free entry is key to economic vitality of capitalism.

I. Accumulation of distributional coal's increases complexity of regulation, role of government, and complexity of "understandings" in society, and changes the direction of social evolution.

1. All these groups seeking special advantage, remember, need to capitalize on inability of larger groups—such as the group of the whole—to stop them
 - a. Complexify law: add details & loopholes so rational ignorance prevents rest of society from stopping any particular group's advances
 - b. + each small grp wants to maintain broad body of law as is & add some special benefit for grp. Combination of many such actions \uparrow complexity
2. Plus, in politicians interest to create/allow complexification b/c \uparrow their monopoly of expertise necessary to maneuver through system. This gives valuable service to provide their constituency (& also \uparrow cost to potential competitor—necessarily less expert in system—of running against them).

3. As w/ written understandings of society (law & govt) also of informal, implicit understandings that underpin society (less able to observe process)
4. Might suppose δ size&scope govt favors poor&weak, but not necessarily:
 - a. Almost certainly under-represented for one thing, for all reasons above.
 - b. Plus, evolution continues, & increasingly complex society, politics, & economy increasingly selects for those who can best operate in such:
 - (1) γ education certainly remains as important, if anything δ —though probably different education (more lawyers, fewer engineers?)
 - (2) may suggest why intellectuals not overly concerned with this particular dynamic (since it selects for their skills)
- J. All 9 implications are listed on page 74. The rest of the book tries to bring historical evidence to bear on certain combinations of them.

VII. Ch. 4: Apply LoCA to Developed Democracies Postwar Growth

A. Summarizing *The Implications (of the Logic of Collective Action)*

1. No countries obtain symmetrical organization of all groups having common interest and so obtain optimal outcomes by comprehensive bargaining.
2. Stable societies with unchanged boundaries tend to accumulate more collusions and organizations for collective action over time.
3. Members of small groups have disproportionate organizational power for CA; this disproportion diminishes over time but does not disappear.
4. On net, special-interest organizations and collusions reduce efficiency and aggregate income in their societies and make political life more divisive.
5. Encompassing org's have some incentive to foster societal prosperity, to redistribute income to their members with as little excess burden possible, and to cease redist. unless its amount substantial relative to its social cost.
6. Distributional coalitions decide more slowly than individuals and firms that comprise them, have crowded agendas, and fix prices than quantities
7. Distributional coalitions retard society's capacity to adopt new technologies and to reallocate resources in response to changing conditions, and thereby reduce the rate of

economic growth.

8. Distributional coalitions, once big enough to succeed, are exclusive and seek to limit the diversity of incomes and values of their members.
9. Accumulation of distrib. coalitions increases regulation complexity, gov't role, and social "understandings" complexity, and changes direction of social evolution.

B. The Argument in a Nutshell:

1. Stable societies accum. special-interest org's & collusions (SI's) over time, & smaller org's form more readily than larger so dominate societal org. (#2)
2. Small SI's little incentive to δ whole-nation productivity but great to try to redistribute nat'l output even if redist. greatly harms nat'l productivity (#4)
3. Barriers established grps maintain to new-grp entry and general slowness of grp decision-making reduces economy's dynamism and growth rate (#7)
4. SI's also δ regulation, bureaucracy, & political intervention in markets (#9)
5. Υ those countries whose societies, polities, & economies most radically razed during & rebuilt (differently) after WWII will have grown best, those that escaped relatively unscathed will have continued to amass SI's from a relatively unaffected base and so should have grown worse—*ceteris paribus*.
6. Most/least disrupted by war Υ fastest/slowest growing after (cet. par.). EX: Switzerland or Austria? Sweden, Norway, or Finland? UK or France? Italy, Germany, or Japan?
7. Olson calls this the "**institutional sclerosis**" argument.

C. Direct evidence Olson offers (citing Murrell) that SI's accum. over time & that this accum. was disrupted roughly in proportion to war devastation? (pp 79-80)

1. Raw number of organizations
2. Age of existing organizations
3. How should these relate to growth?
4. Murrell also examines ratio of new-industry growth to old-industry growth in UK and Germany. What relation is expected? Why? What was found?

D. Alternative explanations of Germ./Jap./Fr./It. miracles & *British Disease*

1. Destruction of physical capital (factories, machines, etc.) Y these countries had “catch-up” potential to grow faster. This certainly part of the story...
2. BUT: British physical capital as destroyed or nearly so as, say, Italian, etc.
3. BUT: can't explain why destroyed ctrys kept growing atypically well even after reaching pre-war cap. levels or why some leap-frogged in wealth, etc.
4. Increased importance of human capital (education, know-how, innovation, etc.) after the war made the physical-capital destruction less important.
 - a. Possibly part of story: rebuilding economies not “hindered” by old networks of physical capital so could leap to newer technologies (See Gerschenkron: *The Economic Advantages of Relative Backwardness*)
 - b. BUT: precisely these countries were those most depleted of most useful human capital in this regard (all those dead youth)
5. German & Japanese industriousness “culture of hard work,” v. Brit laziness
 - a. Doesn't directly explain growth b/c greater industriousness explains higher level of economic production not the *rate of growth* thereof.
 - b. Industriousness could translate to greater innovation (that too requires effort), or could correlate with greater propensity to save (=to invest)
 - c. BUT: if accept this arg., must accept British were industrious in 18th & 19th C, while Germans slothful until end of 19th C. Japanese slothful until early 20th. What explains the timing of industriousness? Why one group industrious at one time and another at another time?
 - d. Olson: Maybe ‘cultural’ predisposition toward “industriousness varies w/ incentive to work to which individuals in different countries [at diff. times] have become accustomed”?
 - (1) I.e., must explain why return to effort differs from country-time to country-time if wish useful explanation of diff. performance
 - (2) Olson: one source of diff. return to effort is degree to which SI's succeeding in redirecting nation's output: return from my effort is less the more [other] SI's can redirect it to themselves.
6. Unusually large role of British government in economic management
 - a. BUT: UK government not atypical in this regard (more toward middle than top of tax/GDP or spend/GDP among developed democracies).

- b. BUT: Relatively slower UK growth than other dem's almost 100 yrs; long before govt involvement in economy sizable there (or anywhere)
- c. Again, some evidence linking size of govt to growth, but...
 - (1) not very strong & appears only for very big govt (40-50%+ GDP)
 - (2) must explain why some govt's act much more than others if costs

E. (Brief) Applications of Theory in Three Long-Stable, Developed, Democracies

1. Switzerland: Long peaceful, stable democracy; relatively low growth since WWII γ appears to confirm, but other key considerations factor in:
 - a. The "catch-up" argument
 - b. Special attractions: as a stable monetary center, Switzerland benefits from instability elsewhere.
 - c. \Rightarrow very hard to determine how much growth would amount to support for the institutional-sclerosis argument
2. Sweden: Long peaceful, stable democracy (less than Switz.); low to mid growth (but more than Switz.) since WWII γ appears to confirm, but note:
 - a. Org's in Sweden, esp. key ec. org's of unions & employers' assn's, more encompassing than most elsewhere γ \uparrow redistrib., \uparrow growth-promote
 - b. Encompassing org's less detrimental or even, possibly, beneficial in some circumstances to national efficiency
 - c. But note: encompassing-organized society probably less able to respond to shocks than otherwise equally efficient society composed of few SI's
 - d. What enables encompassing organizations to form?
 - (1) Late development [Why?]
 - (2) Small and homogeneous countries [Why?]
3. United States: 200 yrs of same dem. constitution & never foreign-occupied; probably least encomp. org's (rel. to size of ctry) of any dev. dem.; has had among slowest growth γ support, but, again, some other issues to consider
 - a. Civil War had massive disruptive effects, esp. in the south.

- b. Some parts of ctry much younger than others γ less time to amass SI's
- c. Was ahead of others technologically & in physical capital after WWII, so should have grown slower for that reason also
- d. γ again diff-to-imposs. to say how fast theory predicts US would grow

VIII. γ Broad comparative evidence: i.e., statistical evaluation of historical record

- A. Olson compares 48 US states (read pp 94-117 very carefully), but consider set of developed democracies following WWII first.
 - 1. Battle Deaths & Societal/Political Disruption Caused by Occupation and Defeat will be our measures of Olsonian disruption caused by the war
 - 2. We must "control" at least for simplest alternative: that poorer ctrys simply have more room to grow and so tend to "catch-up" to wealthier

IX. **Aside on Linear-Regression Analysis:**

- A. Here's some data that will help us evaluate the theory:

	Average Annual Real GDP/Capita Growth GROWTH	Real GDP per Capita in 1955 GDP55	ln(1+WWII Deaths Per 10000 Population) WWIIDeaths	WWII Political Disruption WWIIPolDis
US	1.78%	9.182	3.48	1
Japan	5.71%	7.627	4.96	5
Germany	2.98%	8.543	6.22	5
France	3.10%	8.470	3.97	3
Italy	3.64%	8.183	2.93	4
UK	2.19%	8.732	4.06	2
Canada	2.61%	8.851	3.57	1
Austria	3.44%	8.265	0.00	3
Belgium	2.81%	8.521	2.52	3
Denmark	2.72%	8.600	0.00	3
Finland	3.29%	8.417	5.35	3
Greece	4.05%	7.431	2.71	3
Ireland	3.20%	8.034	0.00	0
Netherlands	2.60%	8.575	2.08	3
Norway	3.13%	8.531	2.07	3
Portugal	4.62%	7.339	0.00	0
Spain	3.78%	7.869	0.00	0
Sweden	2.32%	8.798	0.00	0
Switzerland	2.05%	9.000	0.00	0
Australia	2.01%	8.883	3.93	1
New Zealand	1.48%	8.836	4.69	1
WWII Political Disruption:	0=NEUTRAL; 1=Participant, no war on home soil; 2=Participant, war on home soil;3=Participant, conquered by Axis, liberated; 4=Axis participant, early surrender, mild foreign reformation; 5=Axis participant, unconditional surr., foreign reformation			

B. We will ask computer to find set of (linear) coefficients, b_0 - b_k , that best summarize the relationships exhibited by these data, i.e., to find the set of coefficients that produce the smallest total of errors across all ctrys using:

$$\text{GROWTH} = b_0 + b_1\text{GDP55} + b_2\text{WWIIDeaths} + b_3\text{WWIIPolDis} + \text{error}$$

C. How to read regression output: $Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + \dots + b_kX_k + e$

1. Left of =: name of **dependent variable**, Y, or some abbreviation

$$\text{GROWTH} = b_0 + b_1\text{GDP55} + b_2\text{WWIIDeaths} + b_3\text{WWIIPolDis} + \text{error}$$

2. Right of =: set of **independent variables**, $X_1 \dots X_k$, **coefficients**, $b_0 \dots b_k$ on them, and **error term**, e.

$$\text{GROWTH} = b_0 + b_1 \text{GDP55} + b_2 \text{WWIIDeaths} + b_3 \text{WWIIPolDis} + e$$

3. First coefficient, b_0 , is coefficient on the **constant** (1), a.k.a. **intercept**.
4. Each of the other **coefficients, b_i** , tell you how much the dependent variable tends to move for a 1-unit increase in that independent variable, X_i .
 - a. Sign of b_i tells you **the direction of the relationship, and**
 - b. Size of b_i tells you **the magnitude** (remembering the substantive scales)
 - c. **EX:** $\text{GROWTH} = 1.5 - .5 \text{GDP55} + .25 \text{WWIIDeaths} + .75 \text{WWIIPolDis} + e$
 - (1) $b_1 = -.5$
 - (2) Y negative relationship b/w 1955 wealth and ensuing growth rate
 - (3) Y each 1-unit more GDP55 tends to produce -.5% growth.
5. Under estimated coefficients usually appears estimated **standard errors**.

$$\begin{array}{ccccccc} \text{GROWTH} & = & 1.5 & -.5 & +.25 & +.75 & +e \\ & & (.2) & (.1) & (.125) & (.25) & \end{array}$$

- a. **Std Errs indicate precision or certainty of estimated relationship:**
 - (1) How certainly do increases in indep. var. lead to movements in dependent variable?
 - (2) How precise is estimate that Y changes by b-units per 1-unit change in X?
 - (3) How much variation around average relationship does historical record reveal?
- b. You can read these as loosely something like the \pm number that attaches to any survey. 90% of Americans like chocolate (± 4). EX: “when X_1 8 by 1, Y 9 by about .5 ($=b_1$) give or take .1 ($=\text{std err of } b_1$).”
- c. Sometimes **t-statistics** reported also or instead of standard errors.
 - (1) like s.e. at very least smaller than its coefficient for us to lend any credence to the coefficient estimate.
 - (2) t-statistic is simply coefficient divided by standard error, larger t Y more precise relationship (tighter, not necessarily bigger)
 - (3) generally prefer s.e. around half as large as coefficient or smaller = crude rule-of-thumb: like t approaching or exceeding about
- d. Sometimes **p-level** or **probability** instead or also.

(1) p tells probability (under some assumptions) of having estimated a coefficient this far or farther from 0 if true relationship were 0.

(2) Indicates loosely the degree of certainty ($1-p$) with which we can say with any statistical certainty that a relationship (+ or -) exists.

(3) Like p approaching or smaller than 0.10 (crude rule-of-thumb).

e. Or sometimes **Z% confidence interval** (c.i.) for coefficient estimates:

(1) Again, refer to certainty or precision of estimated relationship

(2) Crudely: we can say that, under certain assumptions, we are “Z% confident” the true relationship is b/w bounds given in the c.i.

D. This is **multiple regression**:

1. Just like scatter-plots we’ve seen for 2 variables, only we explore relations b/w a set of indep. vars. & the dep. var.

2. Each coefficient is

a. “the effect of X on Y, holding all else constant” or

b. “the effect of X on Y after having ‘netted out’ all (linear) relationships between the other X’s & Y” or

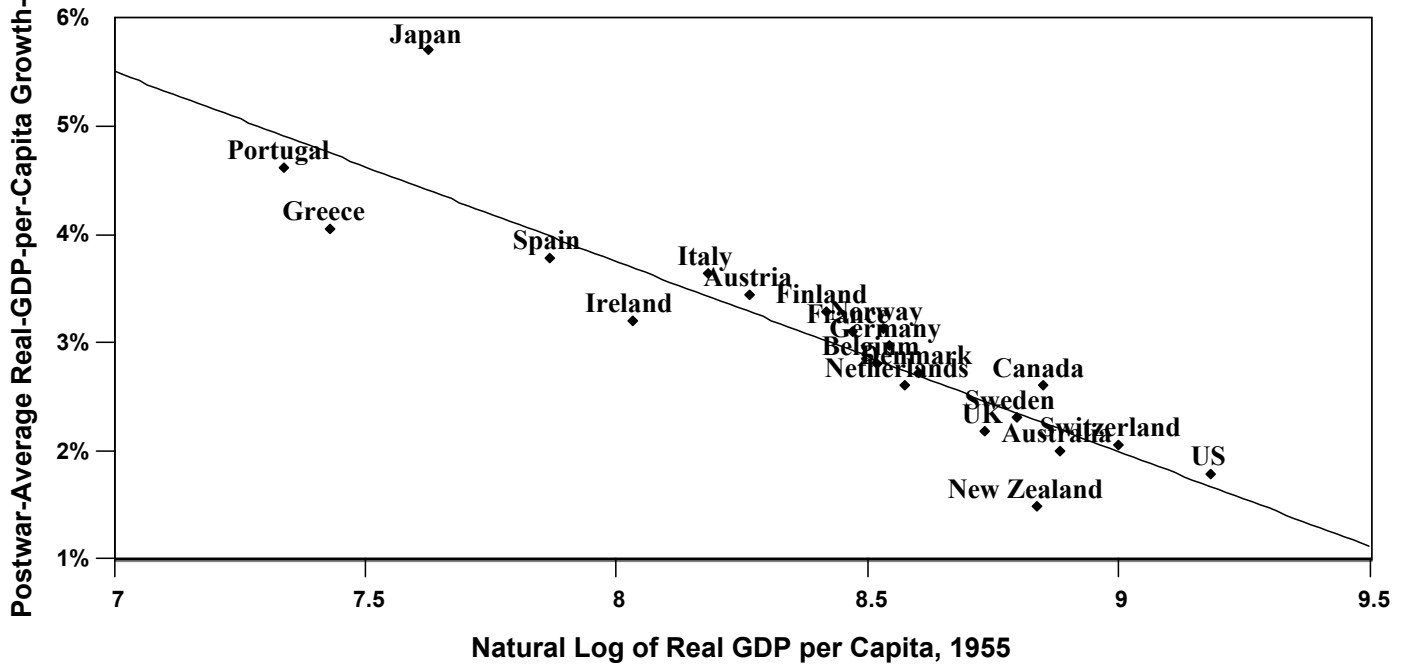
c. “the effect of X on Y ‘controlling for’ the other X’s”

Questions?

E. We’ve already seen this once, graphically, for the equation:

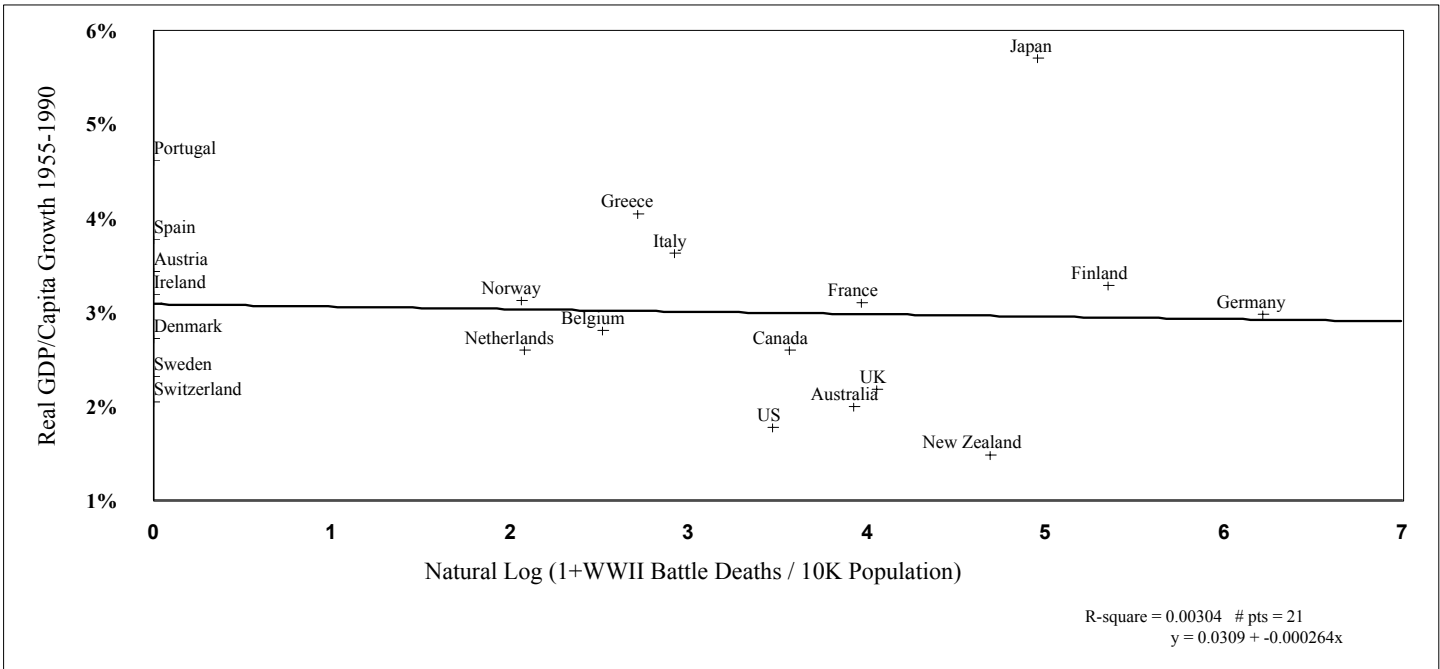
$$\mathbf{GROWTH} = b_0 + b_1\mathbf{GDP55} + \text{error}$$

The "Catch-Up" Hypothesis

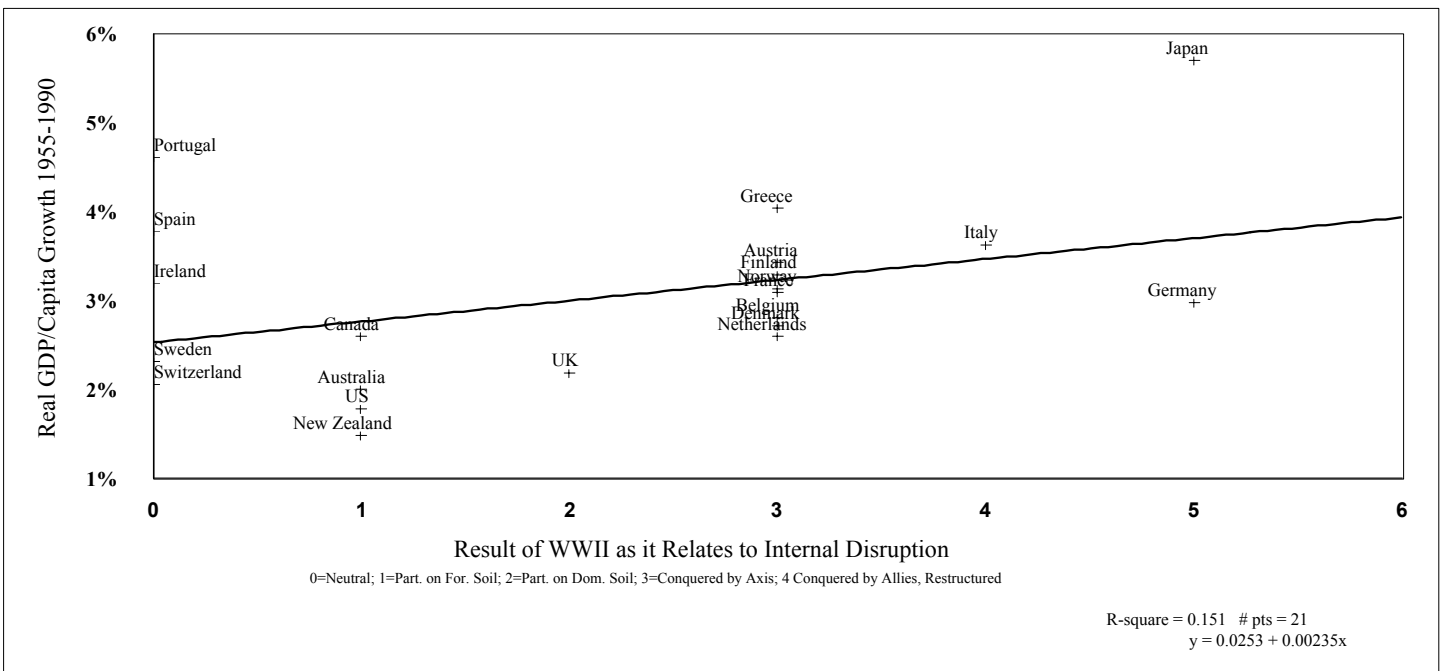


1. So computer finds straight line that comes closest (for straight line) to “fitting the data,” which comes to us from the historical record.
2. That straight line, $Y=b_0+b_1X$, here **GROWTH**=.178-.0176**GDP55**, describes the empirically existing relationship between X (here: wealth in 1955) and Y (here: growth from 1955-90).
3. Note also the standard error of b_1 =.0019. What does this tell us?

F. Back to Hypothesis: Explore relationship b/w growth & WWII Battle Deaths per 10,000 Population. Doesn't appear to be much relationship:



G. We can do same for outcome of war for each nation:



H. Problem w/ simple 2x2 graphs: 2D allows only 1 thing on X-axis

1. We don't, however, expect one cause (such as WWII battle deaths) of any particular outcome (such as growth from 1955-90).
2. We expect lots of things matter, the *LoCA* and *Institutional Sclerosis* being only one, and battle deaths in WWII captures only one aspect of such institutional sclerosis: measuring disruption caused the nation by the war.

- Want somehow to “net out” other factors that might contribute to 8 or 9 growth & then see if disruption caused by war relates to part of growth that remains unexplained after “netting out” effects of these other factors. That’s exactly what computer does when it finds whole *set* of coefficients, b_0 - b_k :

$$\text{GROWTH} = b_0 + b_1\text{GDP55} + b_2\text{WWIIDeaths} + b_3\text{WWIIPoIDis} + \text{error}$$

I. Actual results here: (Lotus 1-2-3 print-out) data seem to support equation:

$$\text{Growth} = .167 - .0165(\text{GDP55}) - .00017(\text{WWIID}) + .00155(\text{WWIIPoID})$$

(.0019)
(.00055)
(.00070)

Regression Output:				
Constant			0.1665815	
Std Err of Y Est			0.0039931	
R Squared			0.8619288	
No. of Observations			21	
Degrees of Freedom			17	
X Coefficient(s)		-0.01654	-0.000169	0.0015501
Std Err of Coef.		0.0019129	0.0005513	0.000695
t-Statistic		-8.646626	-0.306612	2.2302194

- Interpretation of coefficients: 1-unit increase in the index WWIIPoID is associated with a .155% lower annual growth of real GDP per capita.
- Interpretation of “standard errors”?
- Interpretation of the R^2 :

J. Now consider the results from the following equation also:

$$\text{GROWTH} = b_0 + b_1\text{GDP55} + b_2\text{WWIIDeaths} + b_3\text{WWIIPoIDis} + b_4(\text{WWIIDeaths})\text{WWIIPoIDis} + \text{error}$$

Regression Output:					
Constant			0.1579584		
Std Err of Y Est			0.0038258		
R Squared			0.8807133		
No. of Observations			21		
Degrees of Freedom			16		
		GDP55	WWIID	WWIIPD	D*PD
X Coefficient(s)		-0.015343	-0.001133	0.0006662	0.0004008
Std Err of Coef.		0.0019818	0.0008048	0.000868	0.0002525
t-Statistic		-7.742051	-1.407681	0.767493	1.5873176

1. Can you interpret this on your own now? Here is a table that may help:

Growth Rate of Real GDP per Capita Depending on Political Disruption and Death from WWII						
	PolDis	PolDis	PolDis	PolDis	PolDis	PolDis
WWIIDeaths	0	1	2	3	4	5
0	0	0.07%	0.13%	0.20%	0.27%	0.33%
1	NA	-0.01%	0.10%	0.21%	0.31%	0.42%
2	NA	-0.08%	0.07%	0.21%	0.36%	0.51%
3	NA	-0.15%	0.03%	0.22%	0.41%	0.59%
4	NA	-0.23%	0.00%	0.23%	0.45%	0.68%
5	NA	-0.30%	-0.03%	0.23%	0.50%	0.77%
6	NA	-0.37%	-0.07%	0.24%	0.55%	0.86%

2. Results suggest countries grew most, controlling for their level of economic development, that were most politically razed-and-reconstructed by the war:

a. i.e., where 3#PolDis#5 (i.e., from country conquered & occupied by Axis, to early-defeated Axis power & mild reconstruction, to unconditional surrender by Axis power and major socio-pol. reconstruct.):

b. Among these countries, greater ° of human destruction (as measured by war deaths) Y 8growth (controlling for the previous level of wealth)

3. For those escaping occupation (PolDis 0-2), 8human destruct. Y 9growth. Olson’s theory: these experienced little SI destruct., only people & capital. Controlling for catch-up effects, as here, more such destruction detrimental.

K. Clarifies: not death & destruction *per se* that positively impacts growth. (Olson argues) accompanying destruction of accumulated SI’s working here. Existing SI’s more likely disrupted by period of occupation & more likely still by complete defeat & foreign imposition of new political order.

Reread Olson pp. 94-117 now if you didn’t understand what was going on the first time through.

X. Olson’s evidence derives from the postwar history of US states:

“In formerly Confederate states, development of many types of special-interest groups has been severely limited by defeat in the Civil War, reconstruction, and racial turmoil and

discrimination (which, until recently, practically ruled out black or racially integrated groups). The theory predicts that these states should accordingly be growing more rapidly than other states, and the statistical tests systematically and strongly confirm that this is the case" (p. 97).

Some Examples: (t-stats in parentheses)

Growth of Private Non-Farm Income Growth 1965-78 = +10.581
-1.620 (Yrs since State or Civil War) -0.020 (Urbanization 1880)
(3.38) (2.01)

Unionization in 1964 =
+22.924 -9.974 (Civil War) +0.167 (Urbanization 1880)
(3.28) (2.34)

Growth of Private Non-Farm Income Growth 1965-78 =
+10.02 -1.72 (Years since Statehood or Civil War)
(3.38)
-0.0008 (State's Relative Wealth 1965)
(1.71)

XI. Ch. 5: Jurisdictional Integration and Foreign Trade

- A. The puzzles: explaining famous instances of remarkably rapid growth
1. United States in the century or so following the adoption of its constitution
 - a. Rose from colonial backwater to one of 4+/- economic powers by late 19th C
 - b. Key events:
 - (1) Constitution unifying the colonies
 - (2) Key econ. provision: removal of (supposedly all) barriers to commerce b/w states
 - (3) Westward expansion
 - (4) Civil War
 2. Germany from 1st half to 2nd half of the 19th C
 - a. From 1 of poorer European regions to 1 of 4+/- econ. powers by late 19th C
 - b. Key events
 - (1) Political union of previously “Balkanized” nation under Wilhelm and Bismarck
 - (2) *Zollverein* customs unions b/w those “palatinates” as political union firmed
 - (3) Franco-Prussian War and build-up to WWI
 3. The EEC original 6 in the years just after its foundation
 - a. Germany, France, Italy, Belgium, Netherlands, Luxembourg rose from ashes of WWII to era of strong growth, (re-)taking European leadership
 - b. Key events:
 - (1) WWII
 - (2) Common market & customs union (0 tariffs b/w selves, common to outsiders)
 - (3) EEC moved locus of some political decision-making, national to supra-national
 4. Common feature of preludes to these examples: *Jurisdictional Integration*
 - a. Created or expanded large region w/in which something approaching free trade

- b. Allowed relatively unrestricted factor mobility (capital and labor) w/in that area
- c. Shifted authority for at least some important decisions, esp. about economic policy, from set of smaller jurisdictions to one larger one

5. Olson's Further Examples:

- a. Centralizing monarchs of late 15th and early 16th centuries which began a period of "commercial" and then "industrial" revolution
- b. Rise & decline of cities over this time: locus of growth not old but new cities
- c. [Your Further Examples]

B. Commercial & Industrial Revolutions [another compelling theoretical account: North & Thomas, *The Rise of the Western World*]

1. 'Centralizing monarchs' of late 15-16th C set stage. Theoretical bldg blocks:
 - a. *Gains from Exchange*: Supply and Demand, Consumer and Producer Surplus
 - b. *Gains from Trade*: Law of Comparative Advantage: 2x2 & PPF illustrations
 - c. ...enormous importance of reduced internal & external trade-barriers to total number & amount of exchanges when jurisdictional boundary 8, tariffs 9, etc.
2. "Those bloody guilds!" Or, "So why did old towns decline (relatively) while new towns skyrocketed past them?"
 - a. Guilds: [DEFINE]
 - b. Guilds: their actions and impact on the political economies in which they act
 - c. Guilds often given monop. privileges in exchange for certain tax arrangements
 - d. Theory: *The Costs of Monopoly*
 - e. More Theory, Briefly: *Rent-Seeking*
 - f. The "Putting-Out" System as proof of the costs of guilds
3. The impact of Jurisdictional Integration on all of this
 - a. Diminishes monopolies [How?]
 - b. Moves locus of (political) decision-making [So what?]

- c. 8 amount of political influence grp of given size needs to get its way [Why?]
- d. All beneficial. However, severely undermined if monarch grants monopoly to local guilds or creates new, larger ones [See North & Thomas, *Rent-Seeking*]
- e. Note: reduced costs of conducting transactions at a distance is root cause here
 - (1) This could occur through advances in transport technology [examples?]
 - (2) Reduced risks (theft, accidents, *etc.*) of transport/exchange works same [e.g.]
- f. Adam Smith: “the division of labor is limited by the extent of the market”
 - (1) Smith: “division of labor” and competition are sources of capitalist efficiency, of gains from exchange
 - (2) Olson, in essence, adds that extent of market limited by natural and artificial barriers to exchange [whether these barriers lie at jurisdictional borders (tariffs, *etc.*) or within them (any of various *transaction costs*) is largely irrelevant]

C. Olson’s Evidence: greatest growth in areas that experience political upheaval & jurisdictional integration

1. Generally:

- a. Commercial and Industrial Revolutions occurred after the “extraordinary reduction in trade barriers and other guild restrictions, and”
- b. “...overwhelmingly in new cities and suburbs *relatively free of guilds*” (p. 127)

2. Anecdote, UK:

- a. Through 17th and even into 18th C, civil war and political instability
- b. Commercial & Industrial Rev’s really surge around the middle of 18th C

3. Anecdote, Netherlands:

- a. Achieves independence (from Spain) around turn of 16th to 17th C (*via* revolution based on complicated mix of tax, religious, and political differences with Phillip II of Spain; Dutch led by House of Orange)
- b. Independence also brings unification of the 7 northern counties of “Low Countries” into what is roughly modern-day Holland under the Oranges
- c. The Netherlands subsequently rises to world’s pre-eminent economic power through late 17th and into 18th C

4. Anecdote, France:

- a. Not eliminate many of its internal trade barriers until French Rev. (1789±)
- b. Did achieve some jurisdictional integration under Louis IV (1643-1715): *cinq grosses fermes*
- c. Middling econ. performance in this period, better than Germany & Italy though

5. Anecdotes, Germany and Italy:

- a. Til mid-to-late 19th C, each quilt of small city-states, palatinates, principalities
- b. Exchange b/w regions = across borders Y often significant tariffs
- c. Following unification—Germany under Wilhelm & Bismarck leading Prussia; Italy under Garibaldi & Vittorio Immanuele leading Kingdom of Two Sicilies (modern Sicily + region around Venice)—each surged, esp. Germany

6. Anecdote, United States through WWII:

- a. Rev. had usual effect of disrupting existing SI (n.b. 1/3± colonists remained loyal, many fled to Canada Y no doubt their SI power structure dismantled)
- b. Constitution prohibited barriers to exchange b/w states (were many before)
- c. Century of westward expansion [+ population growth] continually expanded jurisdictional boundaries over which that constitution applied
- d. Immigration [why should immigration be important in Olson's theory]
- e. US growth through *ca.* 1900—interrupted by Civil War—historically exceptional

7. Anecdote, EEC (first EC&SC, then EEC, then EC, now EU):

- a. [Provided political and economic stability for countries destroyed by the war—Olson doesn't emphasize this aspect.]
- b. Classic case of set of small jurisdictions w/ some barriers to exchange b/w them, uniting into customs union w/in which no or much lower barriers.
- c. Set of countries w/ high tariffs forming custom union gain immensely, even if barriers to those outside union don't fall
- d. Add Kennedy Round of GATT tariff reductions, and postwar SI destruction, Y quite an environment for growth

8. Anecdotes, Australia and New Zealand:

- a. Relatively wealthy and resource-rich (esp. Australia on latter), but increasingly surpassed by less well-endowed countries over postwar era
- b. Notably:
 - (1) Also had quite long periods of internal stability without foreign occupation
 - (2) Also had abnormally high tariffs on industrial products
- c. Suggestion is that these too fit the theory

9. N.b., plural of *anecdote* is *data*.

D. Back to Gains from Trade

1. Olsonian Gains from Trade—additional to others above [passage on p. 139: “When no tariffs...jurisdictions w/ greater efficiency & higher incomes.”]
 - a. Monopolies and cartels harder to maintain
 - b. No government to enforce international cartel’s quotas
 - c. No single government to lobby for cartel’s special interests
 - d. Individual governments might enact inefficient legislation to benefit groups, but even this is limited if factor mobility
2. If free trade & factor mobility so good, why so much opposition to them? Why do gov’ts curtail them so much? Ask whose interest is served:
 - a. Firms and collusions thereof [examples]
 - b. Workers and collusions thereof [examples]

E. Assessing “Unions to Blame” Arg. for Brit. Disease: Part right & wrong

1. As SI’s unions do considerable damage in the usual way
2. However, almost always case that collusions of employers easier to form [why?] Y almost certainly much more of blame belongs on employers’ SI’s
3. Also, UK has had relatively open trade; “Disease” should be most severe in non-traded sector—E.g.: Merchants, “Parochial” industries & services, Construction, Government, Professions

XII. “...an inherent conflict between the colossal economic and political advantages of peace and stability and the longer-term losses that come from accumulating networks of distributional coalitions that can survive only in stable environments” (p. 145).