Regulatory Competition in Domain Name System Regulation

(Temporary Name)

C. L.

Information Policy, SIMS

Masters Thesis

Spring 2002

"We should, perhaps, concentrate less on trying to specify optimal configurations of legal systems and more on the design of processes through which more, rather than less, favorable configurations may emerge, less on the question "what is the best rule to govern a particular transaction?" and more on the question "what is the best algorithm for finding more acceptable rule configurations?" At the very least, an understanding of generally applicable principles that describe the behavior of interdependent systems of all kinds should inform our policy debate in cyberspace and elsewhere."

(David Post and David Johnson,1998) [1]

Introduction

The question vexing social regulators and scholars of social policy since the emergence of the Worldwide Web and the commercialization of the Internet has been, how should cyberspace be governed? Which agencies should determine the optimal level and location of regulatory effort? Should Internet governance be a uniform set of rules, or should it be an adaptive, decentralized process that represents the diverse preferences of autonomous groups of Internet users? As Internet communications continue to expand globally, many nations are struggling to find the right mix of institutional arrangements that will balance their interest in realizing the economic potential of the Internet with coping with the legal and social issues that arise in relation to Internet use.

Few conflicts that arise concerning technology policy are more challenging than the administration and oversight of the Internet's distributed resource location system, the Domain Name System (DNS)[2]. The distributed attributes of the Internet architecture itself have resulted in the emergence of a transnational network in which flows of information,

[1] David Post and David Johnson, "*Chaos Prevailing on Every Continent*": *Towards a New Theory of Decentralized Decision-Making in Complex Systems*," 73 **[Is 73 the volume #? It should be]** Chi-Ken. L Rev **[check title of the journal] [first page of article cited should go here]**, 1055 **[this should be the page number of the citation]** (1998).

[2] One of the more cogent definitions of the DNS is offered by Milton Mueller: "The DNS is a distributed database protocol that allows end users from around the world to coordinate the assignment of unique names to computers. The protocol also coordinates the translation of those names into numerical IP addresses that guide the movement of packets across the network." See Milton Mueller, "Competing DNS Roots: Creative Destruction or Just Plain Destruction?".(paper presented at the TPRC **[Spell out what**

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generally unfettered by regulation, pass freely between constituencies with little consideration for local values or standards. Courts and social regulators alike are confused over procedural issues such as jurisdictional assignment, dispute resolution, determination of who has control over the technology, and appropriate location for DNS regulatory functions within the spheres of political and social organization. I approach the question of how the authority to control naming and directory services should be allocated at the international, state, and local levels and what levels of centralized intervention, if any, will produce the optimal regulatory outcome by showing that the legal and economic consequences that would likely result if diverse regulatory structures compete for DNS governance would be less ideal.

The first section of the paper provides a historical perspective on the evolution of DNS governance and regulatory outcomes at various stages and maps the theoretical framework of my analysis. This section of the paper attempts to evaluate the legal, economic, and political indeterminacies associated with the allocation of power among the various stakeholders, including:

- State actors, such as the Department of Defense (DoD), the Department of Commerce (DoC), and the National Science Foundation (NSF);
- Supra-state organizations, such as the World Intellectual Property Organization, the International Trademark Union, and the International Telecommunications Association;
- Local actors, such as registries, registrars, domain name holders and interest groups.[3]

Situating the discussion within the disciplines of public-interest and public-choice economics, the second section of the paper describes my method of evaluating the economic and legal costs versus the benefits of decentralized versus centralized

TPRC stands for] 29th Research Conference on Communication, Information, Cabbages, and Kings, **[is this correct title of conference?] [give city and state where conference was held]**, October 2001).

[3] Registries handle the operations of the root servers, whereas registrars handle the operations of domain name registration services. Registrars rely on a technical and contractual relationship with the registries in order to maintain the cooperative environment required for name resolution.

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Sarah Herbold 5/13/10 8:58 AM
Comment: I am assuming that you will argue that if diverse regulatory structures compete for DNS governance, the result will be less than ideal. If that is not your thesis, state your thesis here. (Don't just say what you will explore, but what your conclusion is.) Be more specific here about what the consequences would be of decentralized regulation.

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regulatory regimes at various stages of DNS evolution. Competition in lawmaking[4] will be the benchmark according to which past and current regulatory regimes for DNS will be evaluated. The goal of the analysis is to shed light on three questions: 1) whether centralized or decentralized regulatory models for DNS system governance produce greater economic benefits; 2) how regulatory power should be allocated across interstate systems, both at the national and international levels, and what is the optimal level of market; and 3) what kind of state intervention ensures regulatory accuracy and efficiency in DNS registration. Based on these findings, the last section of the paper suggests a set of institutional responses that will provide a more efficient and more accurate regulatory framework for DNS registration.

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Sarah Herbold 5/13/10 8:58 AM
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Why a Domain Name System?

Sarah Herbold 5/13/10 8:58 AM
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The Internet's traffic routing system, which tranfers messages to recipients, relies on a system of unique identifiers: Internet Protocol (IP) addresses. The routing system uses the IP addresses to forward each message packet across the constellation of subnetworks that make up the Internet to its destination host. The IP address indicates where the destination host is located on the network, and the domain name indicates which host is associated with a particular domain name. Functionally, domain names resemble ordinary telephone numbers. Each resource in a telephone network has a unique location identifier (the telephone number), which makes it possible to route calls from senders to recipients. Similarly, the Internet namespace requires that each network resource have a unique location identifier, the IP address. Like the phone system, the DNS relies on a hierarchal or layered structure where the top-level domain (TLD) is simply an IP address and a domain. However, unlike the telephone network, the Internet namespace includes an additional mnemonic layer that makes it easier to know who is on the network and how to find them.

Sarah Herbold 5/1/02 9:33 AM
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Sarah Herbold 5/1/02 9:35 AM
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Sarah Herbold 5/13/10 8:58 AM
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Sarah Herbold 5/1/02 9:32 AM
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Sarah Herbold 5/13/10 8:58 AM
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[4] Competition in law refers to competition between alternative private- or public-law models. Competition in law can extend across multiple jurisdictions or occur within a single jurisdiction.

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The naming system resolves queries via a name server that converts host names to specific IP addresses.[5] The highest level of the naming system is the root, which is unnamed. The root file stores authorized top level domains (TLDs) and their respective IP addresses. The root file is copied onto thirteen root servers distributed around the globe. Each time a user types a URL into a browser, an HTTP request-response query is issued to an HTTP server. That HTTP server resolves the host name with the IP address and document location on the destination server. Name resolution often happens very close to the user, but if this does not occur, the 13 root servers are collectively responsible for resolving all queries that cannot be resolved close to the user.[6] Thus, from a technical perspective, the architecture itself dictates where the highest concentration of power lies: in the root server operations. From a political perspective, those individuals or organizations who control the root servers are most powerful, because they control which TLD's are accessible on the Internet and which registry's database will function as the authorized registrar for that TLD.

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Domain Name System Background

The Internet namespace has had a long history of centralized administration and oversight dating back to 1971[7], when the Stanford Research Institute's Network Information Center (SRI/NIC) established the first list of Internet host names. This act gave birth to the domain name system that continues to serve the Internet community today. In 1971, SRI/NIC was a research initiative funded by the US Department of Defense's (DoD) under the Defense Communications Agency. This agency was subsequently renamed the Defense Information Systems Agency, and at that time the DNS project was dubbed DDN NIC/SRI. For the next ten years, the Internet naming system was static, meaning that name and IP address allocation and resolution could occur at only one place, DDN

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[5] The global domain name system recognizes the 13 authorized root servers that are scattered across the globe.

[6] For a general description of name resolution, see: International Internet Ad Hoc Committee, at http://www.iahc.org/dns-refs/gen-ref.html. See also Milton Mueller, "Trademarks and Domain Names: Property Rights and Institutional Evolution in Cyberspace," at http://istweb.syr.edu/%7Emueller/study.html.

[7] Center for Democracy and Technology, at http://www.cdt.org/dns.

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NIC/SRI.[8] Then in 1981, the first domain name server was developed that made it possible for name resolution and name allocation to occur in a distributed environment. The primary function of the domain name server was precisely that: to resolve the domain names with IP addresses in a distributed environment. The domain server's primary effect was to permit faster and more efficient name resolution to take place. In a dynamic naming system, the name resolution model shifts from a single-agent model, where location requests go through a centralized name server either at the DoD or at NSF, to a distributed community of servers that connect users across groups of networks.[9] Under this system, IP addresses can be resolved on any local name server that communicates with one of the 13 root servers.[10]

By 1984, the formal version of a dynamic DNS was implemented by DDN NIC/SRI.[11] At that time, oversight responsibilities of the DNS belonged to the University of Southern California's Information Sciences Institute. During this initial phase of the DNS rollout, the U.S. government had the legal authority to control both the administration and oversight of the TLD names and provided directory services for the 13 root servers. **[this paragraph is red because I changed the indentation]**

First-Generation Regulatory Paradigm

In 1989, the DoD transferred administrative and oversight responsibilities of the DNS to the National Science Foundation. Soon afterward, the NSF created the InterNIC agency so that it could transfer the provision of all nonresearch and nonmilitary name services to a private-sector government contractor, Network Solutions Inc. Network Solutions also maintains the primary root zone file.[12] Prior to the commercial use of the Internet, there was little public concern over the U.S. government's monopoly control of what was to become, by the late 1990's, some of the most valuable "real estate" on the Internet, the URL. But once companies and individuals saw the potential value of associating brand identity with URL's, the race was on to secure legal rights to domain names that had

[8] Milton Mueller, "Sorting Through the Debris of Self-Regulation," *Info* **[Info is the name of the journal?]** 1 (6), December 1999.

[9] Center for Democracy and Technology, Center for Global Internet Policy, at http://www.gipiproject.org/dns/.

[11] See http://www.internetvalley.com/archives/mirrors/davemarsh-timeline-1.htm.

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Sarah Herbold 5/13/10 8:58 AM
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either current or potential commercial value.[13] Throughout much of the 1990's, the rate of domain name registrations increased rapidly, from 300 per month in 1992 to 45,000 per month by late 1995. From 1995 **[to what year?]**, the number of registered domain names increased from 150,000 to 637,000.[14]

[red because I changed indentation]Political leaders believed that if the DNS were to become a self-sustaining private-sector organization, it would have to generate capital from operating the DNS. Charging for registration fees was an obvious place to start. The NSF's decision to make domain name registration a fee-based service appeared to move the DNS toward being able to support itself and seemed as if it would discourage the practice known as warehousing, where individuals would buy and hoard names and selling them at a higher price to trademark owners or anyone interested in securing a particular Internet identity in a domain name.

Second-Generation Regulatory Paradigm

By 1997, as part of the executive branch's Framework for Electronic Commerce, the office of the President directed the Secretary of Commerce to "privatize, increase competition in, and promote international participation in the domain name system."[15] At this time, the Department of Commerce transferred the responsibility for domain name administration and oversight to a newly created agency within the DoC: the National Telecommunication and Information Administration (NTIA). NTIA issued a White Paper in June, 1998 that called for the formation of a private-sector, not-for-profit company that would assume responsibility for three aspects of the DNS system: Internet naming

[12] See http://www.icann.org/icp/icp-1.htm.
[13] Mueller, "Sorting."
[14] Ibid.
[15] White Paper, Docket number 980212036-8146-02, available at http://www.NTIA.doc.gov/NTIAhome/domainname/6_5_98dns.htm.
See also, NTIA **[spell out what NTIA stands for]** paper, "A Proposal to Improve Technical Management of Internet Names and Addresses," Discussion Draft 1/30/98, available at http://www.ntia.doc.gov/ntiahome/domainname/dnsdrft.htm.

Sarah Herbold 5/1/02 10:09 AM
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Sarah Herbold 5/13/10 8:58 AM
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services, Internet protocols, and IP address allocations.[16] In October, 1998, the DoC reached a cooperative agreement with Network Solutions to "facilitate a stable evolution of the domain name system in accordance with the White Paper."[17] As part of that agreement, Network Solutions developed the Shared Registration System, which allows multiple registries to submit domain name registrations for .com, .net and .org. In November of 1998, the new corporation, called the Internet Corporation for Assigned Names and Numbers (ICANN), entered into a memorandum of understanding.[18] Under the agreement, the DoC was charged with oversight responsibilities for ICANN's compliance with the terms of the transition of the technical management of the DNS to Network Solutions and for the development of ICANN's policy-making infrastructure. The DoC also gained oversight authority for the joint development assignment between ICANN and the DoC for the ongoing development of root server technology and the development of other systems architecture.[19] As of January 2002, there were 76 registrars accredited by ICANN. Of these, 29 have obtained the SRS software from NSI, 13 have been certified to begin operations, and 11 are actively registering domain names.[20]

Sarah Herbold 5/1/02 9:32 AM
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Sarah Herbold 5/13/10 8:58 AM
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Sarah Herbold 5/1/02 10:20 AM
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[16] See Internet Corporation for Assigned Names and Numbers (ICANN), at http://www.ntia.doc.gov/ntiahome/domainname/nsi.htm.

[17] National Telecommunications and Information Administration, "Cooperative Agreement Between the Department of Commerce and VeriSign (Network Solutions), Memorandum of Understanding Between the **[something missing here?]**," available at http://www.ntia.doc.gov/ntiahome/domainname/icann.htm.

[18] "Pursuant to a Memorandum of Understanding (MOU) between the U.S. Department of Commerce and the Internet Corporation for Assigned Names and Numbers (ICANN), dated November 25, 1998, the United States agreed with ICANN to collaborate to design, develop, and test the mechanisms, methods, and procedures that should be in place and the steps necessary to transition management responsibility for Internet domain name system (DNS) functions now performed by, or on behalf of, the United States Government to the private sector. The term of this agreement is September 30, 2000, unless otherwise terminated or amended by the parties." See above, n. 13. **[This quote comes from the Mueller article? Not clear what you are quoting. If Mueller is quoting a government MOU, make that clear.]**

[19] See Article IV **[Article IV of what?]** in note 12, above.

[20] Jonathan Weinberg, ICANN, "Internet Stability, and New Top Level Domains" (Draft), Wayne State University **[complete citation needed]**. Weinberg was co-chair of an ICANN working group to formulate recommendations regarding deployment of new generic TLDs in 2000.

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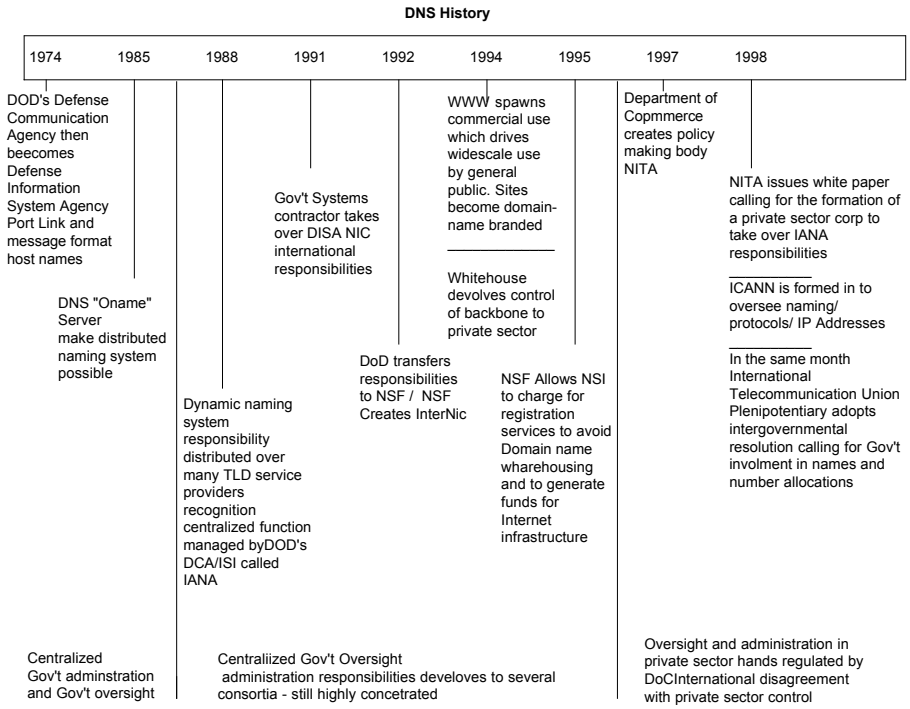

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Section 2

A Preference for Devolution

Since the New Deal, political leaders have tested the limits of institutional Federalism by using adjudication, legislation, and executive decree to pursue their devolutionary goals.[21] Institutional devolution can proceed in many directions: downward from higher to lower levels of government, or outward from units of government to private-sector organizations. This section of the paper describes the dominant forms of devolutionary action that have taken place in the U.S. government as well as the theoretical foundation of political devolution. My goal is to show the range of economic outcomes that result under the various theoretical perspectives. My findings will establish criteria for evaluating the efficiency of the current DNS regulatory regime and will serve as a platform for discussing DNS governance in a regulatory competition setting.

Congressional Devolution

One of the early congressional devolutionary initiatives was the American Families with Dependent Children Act of 1935, whereby the federal government transferred power to the states by assigning them responsibility for administering federally matched financial aid entitlements to families in need. Under the act, states determined eligibility criteria and benefits and retained the bulk of the regulatory authority. During the 1970's, Congress took other significant devolutionary measures in health care and air and surface transportation industries. In the 1980s, the financial services sector was deregulated, so that banks could legally offer financial services such as brokerages that had historically been off-limits to them, and nonbanking institutions such as brokerages and insurance companies could offer services traditionally offered by banks such as loan, deposit, and

[21] Peter H. Schuck, "Symposium: Constructing a New Federalism: Jurisdictional Competition: Introduction: Some Reflections on the Federal Debate," *Yale Journal of Regulation* 1, (1996) **[give inclusive page numbers of article]**.

Sarah Herbold 5/13/10 8:58 AM
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Sarah Herbold 5/1/02 10:23 AM
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Sarah Herbold 5/13/10 8:58 AM
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Sarah Herbold 5/1/02 10:26 AM
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Sarah Herbold 5/13/10 8:58 AM
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account management.[22] By the mid 1990's, Congress had helped deregulate the telecommunications[23] industry and the utilty industry.[24]

Federal Government Agency Devolution

Federal government agencies carry out devolution in a variety of ways. They devolve regulatory responsibilities downward to agency managers[25] as well as outwardly to private sector interests.[26] For example, although transferring the DNS to the private sector originated as an executive branch mandate, the order was carried-out by the DoC.

Executive Branch Devolution

Throughout the 1980's and 1990's, the executive branch has transferred many of the policy responsibilities of federal agencies to states or the private sector. For example, the Office of Management and Budget has administrative and oversight responsibilities for the Privacy Act for 1976, which **[summarize what the act does briefly here]**. However, in practical terms, enforcement of the Privacy Act has been the de facto responsibility of specific industry and other interest groups **[give two or three examples of such groups)**. With respect to the government's own handling of information, administration and oversight of the Privacy Act, although constructed as a national policy, occurs at the agency level.[27] In another example, the Clinton administration made it easier for states to experiment with changes in the Aid to Families with Dependent Children Act, the Child Welfare Reform Act, and Medicaid healthcare system[28].

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[22] See Joseph Nocera, *A Piece of the Action: How the Middle Class Became the Money Class* (New York: Simon and Schuster 1994).

[23] See, for example, the structure of the Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56. State agencies have played a large role as administrators subject to federal oversight and bureaucratic backup.

[24] Citation.

[25] Phillip Agre and Phillip Rotenberg, *Technology and Privacy: The New Landscape* (Place of publication: Massachusetts Institute of Technology, 1997). **[If this is a volume in a series, put the volume number after the title, before the parentheses.]**

[26] Schuck, "Symposium."

[27] Agre and Rotenberg, *Technology*.

[28] Center for Democracy and Technology, Center for Global Internet Policy, at http://www.gipiproject.org/dns/. For a discussion of the degree to which public health objectives rely on government structures that arise from Federalist interpretations, see also James G. Hodge, Jr., "Implementing Modern Public Health Goals Through Government: An Examination of New Federalism and Public Health Law," 14 [*J Contemp H L & Pol'y* 93 (Fall 1997).

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Judicial Devolution

Federal courts have demonstrated their preference for devolution in many areas, one of the most notable of which is state law in nationwide tort litigation. Procedurally, federal district courts have been experimenting with creating their own procedures in an effort to promote more efficient civil discovery and case management.[29]

Private Sector Devolution

Most devolutionary activity tends towards the private sector rather than to the states.[30] As managers in hierarchically structured firms struggle to keep pace with the time- and market-sensitive demands of business, they are increasingly motivated to devolve authority to either smaller, autonomous business units or to outsource specific functions to other members of the supply chain. In doing so, they replace more hegemonic corporate structures with flatter, more nimble organizations that distribute autonomous decision-making authority across the organization.

Historical Context of Devolutionary Action: Federalism

The debate over states' rights versus central government command has been fought passionately, from the Depression through the Civil Rights Movement up to the present day. This debate has become increasingly important to technology policy, particularly in light of the need for interstate and international cooperation.

Modern devolutionary action in general and American Federalism in particular are grounded in the ideals of our country's founding fathers, who saw that the "dynamics, diversity and distribution of the colonial settlements would assure that the emerging civil society, once united in a national polity, would exhibit unprecedented diversity."[31] Over

[29] Jenna Ednar and William N Eskridge, Jr., *Steadying the Courts' Unsteady Path: A Theory of Judicial Enforcement of Federalism*, 68 S. Cal. L. Rev. 1447, 1995.
[30] Amy Chua, *The Privatization-Nationalization Cycle: The Link between Markets and Ethnicity in Developing Countries*, 95 Columbia Law Rev, 1995.
[31] Bernard Bailyn, *The Peopling of British North America* **[I assume this is a book]** (**Place of publication: publisher,** 1986).

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time. Federalism, which promotes the political ideals of liberty, community, virtue and utility,[32] has become an "instrument of modern administrative government that has served as a . . . flexible institutional accommodation to the diversity of American society and to the challenges that diversity poses to society." But critics of Federalism note that Federalism has been exploited by repressive local governments and gave institutional support to some of the most reprehensible acts that have ever occurred in the United States. For example, Federalism has been attacked for creating an environment hospitable to lynching in the Deep South and to barring black children from entering schools.[35] Critics have also contended that the goals of federalism are compromised by the mass acculturation of society. This acculturation, which is largely driven by mass communications, has the overall effect of marginalizing the significance of diversity.[36] Thus, constitutional rhetoric may be out of sync with political realities, and although the trend towards devolution is increasing, even in the context of commercial regulation there is debate about whether and where to locate regulatory authority.

Types of Federalism: Cooperative Federalism

Cooperative Federalism envisions a sharing of regulatory authority between the federal government and the states in a way that allows states to regulate within a framework delineated by federal law.[37] Though national and subnational units of government are treated as separate spheres, under Cooperative Federalism, subnational units embrace a unified federal structure that includes a role for state implementation of federal law even though the states' power can be significantly restrained. The Telecommunications Act of 1996 is a good example of Cooperative Federalism because in that act the federal

[32] Samuel H Beer, *To Make a Nation: The rediscovery of American Federalism* **[a book?] (Place of publication: publisher,** 1993). See also Wallace E. Oates, Fiscal Federalism 31-53 (1972) **[not clear if Oates is a book or what. Citation incomplete]** Oates offers a theory concerning the optimal division of functions among levels of government in decentralized systems.
[35] Paul E. Peterson, *The Price of Federalism* (**Place: Publisher,** 1995).
[36] Amar, "Of Sovereignty."
[37] Philip J. Weiser, *Towards a Constitutional Architecture for Cooperative Federalism*, 79 North Carolina Law Rev 663 (March 2001).

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government invited state agencies and private-sector actors in the telecommunications industry to implement federal law. [38]

Default Federalism

As opposed to *de jure* institutional arrangements, Default Federalism occurs when the national policy maker tacitly "allows the power to make policy and implement decisions to remain with sub-national governments or with private sector actors."[39] The United States' handling of data protection is a good example of Default Federalism. Despite heavy international pressure to enact and enforce stricter data protection laws, the United States has resisted adoption of the European Union's data protection directives in order to protect U.S. commercial interests as well as to accommodate those public interest groups that oppose laws that constrain the use of database content.

Legal Federalism

Legal Federalism is the judicial enforcement of certain aspects of Federalism: specifically, the division of powers between the national and sub-national levels of government or private actors. Legal Federalism is not concerned with limiting the exercise of legislative power.[40] Proponents of Legal Federalism assert that competing governments have an incentive to regulate for the purpose of facilitating cross-border cost externalization by their citizens. The major assertion of Legal Federalism is that competitive forces shape a wide range of outcomes at state and local levels because public goods and regulations figure significantly in the locational decisions of factors of production, citizens, and capital. Moreover, state and local government actors compete for citizens, factors of production, and capital.[41] Because competition leads to an equilibrium, regulation as well as public goods are justified. Consequently, markets align

[38] Id., *Federal Common Law, Cooperative Federalism, and the enforcement of the Telecom Act*, **[vol #]** New York Univ. Law Rev. **[page # where article begins]** (December 2001).
[39] Id., "Towards."
[40] David H. Moore, *International Church-State Symposium: Religious Freedom and Doctrines of Reluctance in Post-Charter Canada*, **[vol. #]** Brigham Young Univ. Law Rev. **[page number where article begins]** (1996). See also William W. Bratton & Joseph A. McCahery, *The New Economics of Jurisdictional Competition: Devolutionary Federalism in a Second-Best World*, 86 Georgia Law J 201, 239-43 (1997); Edward S. Corwin, *The Passing of Dual Federalism*, 36 Virginia L Rev 23 (1950).
[41] Amar, "Of Sovereignty."

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regulatory outcomes with citizens' preferences in a first-best equilibrium.[42] In the long run, the model provides an "empirical answer" that permits only public goods and regulations for which citizens willingly pay.[43]

The normative implications that result from the economics include:

1) Jurisdictional competition will discipline government producers for the benefit of taxpaying citizens, just as price competition disciplines producers of private goods;
2) The central government should be viewed as a cartel, because just as collaboration among competing producers reduces price competition and provides incentives to innovate, so too does the transfer of regulatory power to a central government reduce the number of potential competitors and dilute entrepreneurial incentives;
3) Federal intervention, whether by congressional legislation or judicial decree, inhibits the operation of the market. Therefore, federal intervention is at best unnecessary and at worst produces dead-weight anticompetitive costs. Ultimately, a strong presumption favors locating regulatory authority at junior levels of government [or directed outwardly to the private sector].[44]

However, offsetting these effects are the inevitable cost-benefit trade-offs between levels of regulation and income that prevent the assumption of any a priori fixed preference for any given level of regulation.[45]

[42] This theory assumes that no significant externalities exist on the part of junior units and that capital and labor maintain full mobility.

[43] See Jack Hirschleifer and John G. Riley, *The Analytics of Uncertainty and Information* (place: publisher, 1992); Frank H. Easterbrook, *Federalism and European Business Law*, 14 Int'l Rev Law & Econ 125, 12729 (1994).

[44] Bratton and McCahery, "New Economics."

[45] William L. Cary, *Federalism and Corporate Law: Reflections Upon Delaware*, 83 Yale Law J 663 (1974); Jacques LeBoeuf, *The Economics of Federalism and the Proper Scope of the Federal Commerce Power*, 31 San Diego Law Rev 555 (1994); Richard A. Posner, *Toward An Economic Theory of Federalism*, 6 Harv J Law & Pub Pol'y 41 (1982).

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Competitive Federalism

Proponents of Competitive Federalism argue that political interference with markets tends to put off investment and other economic activity. Therefore, to promote growth, political institutions should credibly commit the state to the goal of preserving markets.[46] Legal scholar Roberta Romano's legal application of Competitive Federalism to securities administration envisions a regulatory regime in which "one sovereign has jurisdiction over all transactions in the governance of the securities of a corporation that involve the issuer or its agents and investors." In her conception of Competitive Federalism, states as well as individual firms could opt out of federal laws and choose those of their state or another jurisdiction. Romano asserts that by constructing goals for securities regulation like those that are produced by state competition for corporate charters,[47] such as maximizing shareholder value and eliminating the cumbersome requirement of national reform, rules are likely to result that are more acceptable to those whose decisions drive the capital markets: consumers and firms.[48]

MarketPreserving Federalism

The Market-Preserving Federalism model is derived from public-choice models of Competitive Federalism.[49] Assuming the national government has the authority to ensure mobility of goods and factors of production across subgovernment jurisdictions, proponents of Market-Preserving Federalism assert that subnational governments that are accountable for budget constraints and who control the economy within their jurisdiction will produce:[50]

[46] Douglass C. North, *Institutions and Credible Commitment*, 149 J.Institutional & Theoretical Econ. (1993).
[47] Roberta Romano, *Empowering Investors: A Market Approach to Securities Regulation*, 107 Yale Law J. 2359 **[is page # correct?]** (June 1998).
[48] Ibid.
[49] Jonathan Rodden and Susan Rose-Ackerman, *Symposium: The Allocation of Government Authority: Does Federalism Preserve Markets?* 83 Virginia. Law Rev 1521 (October year?).

[50] Ibid.

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- Control over the economy by subnational governments within a common market, thus preventing the central government from interfering with markets;
- Intergovernmental competition over mobile sources of revenue which constrains individual subnational governments,
- Self-enforcement under certain conditions. [51]

These initial constraints tend to limit political authority because "sub-units [located in either government or the private sector] are constrained from engaging in inefficient, confiscatory regulation by the fact that they must compete with one another over mobile sources of revenue and no level of political authority has a monopoly on regulatory power."[52] However, the role of the central government does not simply disappear. Interjurisdictional spillovers such as national public goods or negative externalities from rogue states would be underprovided for if "left to the sub-units.[53] Because it lacks political institutional foundation, Market-Preserving Federalism has not been useful as a prescriptive model for institutional reform.

Theoretical Basis for Modern Devolution

According to the Federalist's perspective, "relative regulatory advantage lies within the state and local governments."[54] This view is generally rationalized by the public economics theorem of decentralization, which says that "given a public good consumed by a geographical subset of the population, local government can provide a locally

[51] Gabriella Montinola, Yingyi Qian, and Barry R. Weingast, "Federalism, Chinese Style: The Political Basis for Economic Success in China", *World Policy* 48 (1995), 53. **[Since this is not a law journal, usual usual journal cite format.]** See also Weingast, supra note 7**[is there a Weingast title in note 7? Refer to a previously mentioned article only by the first word or two of the title, not including articles like an or the]**, 288.

[52] Montinola et al, "Federalism." **[is this what you meant to refer to, or Weingast? Ditto for following note]**

[53] Ibid.

[54] Bratton and McCahery, "New Economics."

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determined output level at least as efficiently if not more efficiently than central government can provide a uniform level across all jurisdictions."[55]

The public economics' decentralization theorem relies on an "acceptance of a Musgravian[56] notion that to analyze the benefits of decentralization Government must be considered in terms of three branches: allocation, redistribution, and stabilization." [57] Whether it is beneficial to decentralize the allocation and stabilization branches is unclear, since "whoever assigns powers would assign redistribution and stabilization to the central authorities." The theorem uses four assumptions in order to prove that there are benefits to decentralization: First, that the central governments provide goods and services uniformly across their jurisdiction; second, that there is an inverse relationship between the degree of homogeneity in preferences within jurisdictions and the size of jurisdictions; third, that there are no interjurisdictional spillovers; and fourth, that goods and services supplied by senior and junior governments are produced at constant costs and provided to citizens at identical tax prices.[58]

Opponents of the decentralization theorem argue that governments don't necessarily provide goods and services uniformly across jurisdictions. Instead, governments assign powers rather than policies in order to share powers and to achieve uniformity. They do so by establishing a centralized function in one area of law (such as the federal tax code) and at the same time can devolve federal involvement to the states in another area of law (such as the state tax code).[59] Similarly, governments can apply standards across their jurisdictions in an irregular way. For example, as noted above, although the U.S. Privacy Act is a national policy initiative, in practice it is little more

[55] Albert Breton, Competitive Governments: An Economic Theory of Politics and Public Finance 185, 1996 **[is this a journal or book? Unclear];** Wallace Oates, Fiscal Federalism **[journal or book?]**; James M. Buchanan and C.J. Goetz, "Efficiency Limits of Fiscal Mobility: An Assessment of the Tiebout Model," *Journal of Public Economics* 1 (1972) 39-40. Buchanan and Goetz criticize the Tiebout model's failure to consider the "fact of location" and the "absence of proprietary ownership."

[56] Richard A. Musgrave, The Theory of Public Finance: A Study in Public Economy 5-6, 1959. **[journal article or book?]**

[57] Ibid.

[58] **[which article or book do you want to refer to from note 55? If all of them, give author and short title for each.**

[59] Albert Breton, *Decentralization and Subsidiarity: Toward a Theoretical Reconciliation*, **[vol. #]** J. of Int'l Law & Econ. **[page # where article begins]**, Spring 1998.

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than a set of rules left to agency managers to implement and enforce. Thus, it is up to local state and private-sector interests to determine the accurate or efficient level of privacy protection for their own constituencies.[60] More moderate opponents of decentralization contend that as a "normative matter, the . . . central government should be severely limited but it should also capable of easing the costs associated with decentralization."[61] Moreover, they observe that while "decentralization can not only create opportunities for private goods provisions and rent-seeking at the sub-national level; it may also prevent the central government from mitigating the inefficiencies created by the uncoordinated self- seeking policies of sub national units."[62]

The Elemental Role of Competition in Locating Regulatory Efficiency

The objective of Federalism, according to James Madison,[63] was to avoid legislative tyranny and diffuse power by dividing the legislature into two separate houses, thus making it difficult for either house to claim that it was the true embodiment of the people, and by establishing a national executive branch separate from the judicial branch.

Linking Federalism to the economic realm, legal theorist Akhil Reed Amar's considers to what extent the federalist Constitution's version of sovereignty allows federal and state governments to invoke "sovereign immunity," and argues that regulatory competition across vertical levels of government may correct structural flaws of Constitutional federalism. Amar asserts that the national government can attract citizen support by aiding those whose Constitutional rights have been invaded, and, conversely, states can gain political goodwill by aiding their citizens in situations where federal officials perpetrate wrongdoing. Moreover, he points out the strong parallels between Madison's model of political competition and Adam Smith's model of economic competition. Both models rely on a common idea that the "private and public incentive systems harness individual self-interest in a way that promotes some larger public good like public wealth or public rights and that both models depend on competition to further

[60] Agre and Rotenberg, "Technology."
[61] Rodden and Ackerman, "Symposium."
[62] see note 12, above.
[63] **[see comment to note 58]**

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liberty and forestall undesirable concentration of power."[64] This simple example suggests that the economic legal and political implications of devolutionary action depend on how the dynamics of competition play out in political and legal decision-making by way of the shared political and economic incentives that are grounded in competition. [65]

Competition in lawmaking can occur at many levels. Within the domain of private law, competition can occur through contracts, and in public law, it can occur through legislation. Regulatory competition involves competition between alternative models of legislation and can occur either interjurisdictionally or intrajurisdictionally. However, how competition operates in a regulatory setting is widely debated in public economics. This discussion is primarily concerned with competition's role in determining the location of the regulatory authority and with the underlying mechanisms of legal and economic action. According to the public-choice model, competition operates through domestic political accountability, such that exit—the mechanism that disciplines markets--depends on [political] voice—the mechanism that disciplines government.[66] In the regulatory competition setting, exit is achieved by the advantage of jurisdictional and technical mobility.[67] Given that in this sense regulatory frameworks may be substituted for one another through the political process, regulatory competition is temporal[68] and thus increases the degree to which the regulatory product will reflect the preferences of firms and consumers. In public-interest theory, the concept of competition is measured somewhat differently. In public-interest theory models, competition operates by comparing domestic regulatory structures to foreign regulation benchmarks, but with a goal of improving regulatory efficiency via increased productivity rather than in order to pursue competitive advantage directly.[69]

[64] Amar, "Of Sovereignty."
[65] Explain
[66] In this case voice is the political mechanism that disciplines government. The concepts of exit and voice are found in Albert O. Hirshman, *Exit, Voice and Loyalty, Responses to Decline in Firms Organizations and States* (**Place: publisher**, 1970).
[67] Joel P. Trachtman, "Regulatory Competition and Regulatory Jurisdiction," *Journal of International Economic Law*, 3 (2) (June 2000). **[give inclusive page numbers of article)**. Trachtman's conception of mobility in a regulatory context is defined by the constructed rules of regulatory jurisdiction, and in his conception states are free to modify the rules of regulatory jurisdiction.
[68] Ibid.
[69] Ibid.

Sarah Herbold 5/1/02 12:40 PM
Deleted: leads one to believe …is … [153]

Sarah Herbold 5/13/10 8:58 AM
Comment: Ths rest of this sentence "by way of . . . ") is unclear.

Sarah Herbold 5/1/02 12:42 PM
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Sarah Herbold 5/13/10 8:58 AM
Comment: The following paragraph needs some work. What is the main point? Are you talking about the relation between legal and economic competition? I don't understand this paragraph.

Sarah Herbold 5/1/02 12:43 PM
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Sarah Herbold 5/13/10 8:58 AM
Comment: Do you mean your discussion in this paper, or the debate in public economics?

Sarah Herbold 5/1/02 12:44 PM
Deleted: in terms of … … … --… is…ent –… in this sense… … …T…ion…in public interest theory … … …visa vie …the direct pursuit of … [155]

Sarah Herbold 5/13/10 8:58 AM
Comment: Not sure if this rephrasing states your meaning correctly. It's not clear how the last part of the sentence (after "via") fits in.

Sarah Herbold 5/1/02 4:46 PM
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Sarah Herbold 5/1/02 4:46 PM
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Sarah Herbold 5/1/02 4:47 PM
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Jurisdictional Competition Theory

Jurisdictional competition theory is often referred to as a branch of public-choice theory. Both make devolutionary institutional reform recommendations, and they share a common rational expectations methodology. According to jurisdictional competition theory, firms choose where to locate their activities or choose their nationality based on the regulatory environments they encounter**[OK?]**. Jurisdictional competition is a private-law principle of party autonomy in choice of governing law. The literature reveals three divergent perspectives.The first argues that **[no paragraph break or bullets here]**centralized or harmonized national discipline is necessary to limit the adverse effects on regulatory effectiveness of competition among states. This perspective is concerned about "race-for-the-bottom" effects.[70]The second perspective contends that a race to the bottom would not occur and asserts that from a law and economics perspective, competition is a useful discipline on state corporation laws and produces efficient laws.[71] The third perspective expands on a race-to-the-top argument, arguing that judiciary and legal sophistication would result.[72]

Jurisdictional Competition in a First-Best World Understanding the economic, legal, and political implications of devolutionary action depends on knowing how the dynamics of competition play out in political and legal decision-making. Charles Tiebout's economic theory of jurisdictional competition uses the dynamics of market mechanisms to address the production of public goods. Government producers are disciplined by the market environment to match citizens', preferences to levels of public-goods provision and taxation.[73] Paul Samuelson's model supposes that "public goods are allocated efficiently when the sum of a citizen's marginal rate of substitution of income for the

[70] Supra Note 34 at 8 **[Note 34 doesn't contain anything that would have a page 8, 9, or 10. Not clear what this note and the next two refer to].**
[71] Supra Note 34 at 9
[72] Supra Note 34 at 10
[73] Charles Tiebout, "A Pure Theory of Local Expenditures," Journal of Political Economy 64 (1956), 416– **[inclusive page #s of article here]**."Public goods are the goods and services produced by government for which citizens willingly pay."See also Paul A. Samuelson, "The Pure Theory of Public Expenditures," *Review of Economics and Statistics* 36 (1954) 387, 387-88**[put inclusive page #s here]**

Sarah Herbold 5/1/02 12:52 PM
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Sarah Herbold 5/13/10 8:58 AM
Comment: Isn't it obvious that firm ... [159]
Sarah Herbold 5/1/02 12:53 PM
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Sarah Herbold 5/13/10 8:58 AM
Comment: Are you talking about ... [161]
Sarah Herbold 5/13/10 8:58 AM
Comment: You need to explain th ... [162]
Sarah Herbold 5/1/02 12:56 PM
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Sarah Herbold 5/1/02 9:32 AM
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Sarah Herbold 5/13/10 8:58 AM
Comment: A race would not occur ... [165]
Sarah Herbold 5/1/02 12:57 PM
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Sarah Herbold 5/13/10 8:58 AM
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Sarah Herbold 5/1/02 1:01 PM
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goods equals the marginal cost of an additional unit of the good".[74] However, in the case of public goods, no obvious market exerts downward pressure on government producers' marginal costs, and as a result taxpaying consumers have no incentive to reveal their marginal rate of substitution. In the case of private goods, downward market pressure on producers' marginal costs and market prices reveal concrete information about consumers' rate of marginal substitution. Tiebout's model asserts that the market mechanism that discipline government producers is competing government producers.[75]

Jurisdictional competition models predict that in a dynamic environment, regulation remains in effect.[76] In contrast, centralization and its secondary counterpart, coordination across junior units[77] (that is, state is junior to national), emerge as equivalents of price fixing, thus presumably retarding the competitive evolution of first-best law.[78] Consequently, proponents of jurisdictional competition assign the burden of proving that markets won't work to the proponents of centralization.[79] They also contend that the proponents of central intervention must bear the burden of showing why market forces won't work.[80] However, further testing of the model shows that jurisdictional competition fails to provide a stable equilibrium, which undercuts jurisdictional competition's ability to provide first-best results, such that others would prefer no other outcome.[81] Jurisdictional competition's inability to produce a first-best outcome thus indicates a need for regulation.

Jurisdictional Competition in a Second-Best World

A growing body of literature rejects the Tiebout model's all-or-nothing approach to locating regulatory efficiency and regulatory outcomes. In particular, critics reject the first-best outcome assertion based on the model's dependence on unrealistic conditions of

[74] Id. **[do you mean to refer to Tiebout or Samuelson here? Put author's name and short title.**
[75] Supra Note 34 **[not sure what you're referring to]**
[76] Shuck, "Symposium."
[77] The use of the term *junior units* here refers to the fact that state government would be considered junior to federal government and local would be considered junior to state.
[78] Trachtman, "Regulatory Competition."
[79] Bratton and McCahery, "New Economics."
[80] Trachtman, "Regulatory Competition."
[81] Post and Johnson, "Chaos"; see also Tiebout, "Pure Theory."

Sarah Herbold 5/1/02 1:03 PM
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Sarah Herbold 5/1/02 1:06 PM
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Sarah Herbold 5/13/10 8:58 AM
Comment: What others?

Sarah Herbold 5/13/10 8:58 AM
Comment: Last part of this sentence "such that . . . " doesn't make sense.

Sarah Herbold 5/1/02 1:10 PM
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Sarah Herbold 5/1/02 1:11 PM
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perfect information, full mobility, and lack of externalities, which exclude both political inputs from public interest and voting activity.[82] Because of the model's theoretical shortcomings, legal scholars William Bratten and Joseph McCahery's construct a theoretical framework that situates regulatory competition in a second-best world. Their analytical framework asserts that the complexity involved in solving the long list of problems not taken into account in the Tiebout model makes it difficult to form definite conclusions regarding the economic benefits or the "location of regulatory advantage within the Federal system." [83] This next-generation approach to locating regulatory advantage within a legal regime of Federalism may be more useful simply because it can predict outcomes in relative versus absolute terms. For example, one outcome will result if the starting point of the analysis focuses on regulatory competition, where the "conflict of laws rules put jurisdictions in competition with one another over firms or individuals who are in a position to select a jurisdiction which they will establish as the situs of their legal relationship."[84] A different outcome would be expected if cross-jurisdictional competition compels governments to compete over factors of production or to create competitive advantage for existing residents.[85] Finally, from a trade-theoretical perspective, if competitiveness is a concern for legislators, a focus on a win/lose outcome as opposed to efficiency in production-problematic externalities might arise, resulting in a less than optimal regulatory outcome.[86]

Sarah Herbold 5/1/02 1:12 PM
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Sarah Herbold 5/13/10 8:58 AM
Comment: The rest of the paragraph needs work. Are you talking about two different outcomes under two different assumptions? If so, make that clear. If not, clarify what you do mean. Also , what does the final sentence have to do with the value of these various theoretical models?

Sarah Herbold 5/1/02 6:11 PM
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[82] Bratton and McCahery, "New Economics"; Trachtman, "Regulatory Competition."
[83] Bratton and McCahery, "New Economics." The problems associated with **[what/]** include unstable equilibrium, pervasive cost externalization, information asymmetry, and regulatory capture. **[what is regulatory capture?]**
[84] Bratton and McCahery, "New Economics."
[85] Ibid.
[86] Trachtman, "Regulatory Competition."

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