THE COLLECTIVE ACTION PROBLEM OF

CAPITALISTS AND THE RELATIVE

AUTONOMY OF THE STATE

by

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ABSTRACT

This dissertation explores the economics of regulation prior to and after 1980 in the United States. During the golden age of capitalism, regulation consisted of a set of rules of conduct that imposed mutually binding, socially beneficial restrictions on economic competition. It was widely believed this regulation would sanction those inclined to act opportunistically, making it possible for individual capitalists to act on their enlightened (rather than short-term opportunistic) self-interest. Confidence in the effectiveness of regulation was a commitment device, which allowed individual capitalists to act in concert with their collective class interests. However, the process of deregulation that began around 1980 gradually gave rise to an environment where free riding on others' cooperation became the dominant strategy. The dissertation revisits the theory of the State to highlight the role played by regulatory institutions with respect to the agency of the capitalist class. An analytical framework models the intensity of regulation as a commitment device that increases the likelihood of successful collective action. Theoretical predictions indicate that because deregulation is individually profitable in the short run, it makes collective action more difficult overall as capitalists act opportunistically. The empirical dimension of this research explores the State's relative autonomy, which is necessary if regulation is to be a credible commitment device. Empirical findings indicate that the relationship between the State and the rate of profit at the industry level changed significantly after 1980 compared to the period

before. The empirical results, consistent with predictions of the analytic model and descriptive analysis, suggest that the relative autonomy of the State before 1980 and lack thereof after was an important component in capitalists' ability to act collectively.

To Jen and Ben

As long as everything goes well, competition acts […] as a practical freemasonry[1] of the capitalist class, so that they all share in the common booty in proportion to the size of the portion that each puts in. But as soon as it is no longer a question of division of profit, but rather of loss, each seeks as far as he can to restrict his own share of this loss and pass it on to someone else. For the class as a whole, the loss is unavoidable. But how much each individual member has to bear, the extent to which he has to participate in it, now becomes a question of strength and cunning, and competition now becomes a struggle of enemy brothers. The opposition between the interest of each individual capitalist and that of the capitalist class as a whole now comes into its own, in the same way as competition was previously the instrument through which the identity of capitalists' interests was asserted.

—Karl Marx, *Capital*, *Volume III*

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[1] In other translations, the word *fraternity* is used. The connotation, however, is of a *community, unity,* or a *club*.

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Finally, a very warm and special thanks go to my wife, Jennifer Kangas, who never wavered in her patience and support despite the uncertainty such an endeavor entails. Jennifer and Benjamin deserve much of the credit for my success. It is to them that this work is dedicated.

CHAPTER 1

INSTITUTIONS

1.1 Introduction and Literature

There is general agreement among economists that the period after the Second World War lasting into the early 1970s was characterized by broad economic prosperity in the United States. As early as 1980, economist Martin Feldstein observed that "[t]he first two decades of the postwar period were a time of unsurpassed economic prosperity, stability, and optimism (Feldstein 1980, p.1)." During this period, growth in real GNP (3.9 percent), growth in productivity per hour (3.7 percent), the rate of unemployment (4.7 percent), and the rate of inflation (2 percent) were indicative also of widely shared economic success in the foreseeable future.[2]

Not only was the average worker thriving during the postwar period,[3] but so too was the capitalist class. One economy-wide measure of the profit rate – roughly defined as corporate profits relative to the capital stock – averaged 17.7 percent from 1948 to 1969, compared with 15.3 percent from 1980 to 2012.[4] Despite Marx's expectation that

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[2] Statistics from Feldstein (1980).
[3] Relatively speaking, of course, within capitalist relations of production.
[4] Author calculation using BEA data for 11 NAICS industries. See Appendix B for graphs. From 1970-1979 the profit rate averaged 16.1 percent. These measures are consistent with Dumenil and Levy (1994), updated in 2013, who find that the *aggregate* rate of profit from 1948-1969 averaged 20.5 percent, from 1970-1979 it averaged 17.4 percent, and from 1980-2011 it averaged 17.7 percent.

competition within the capitalist class would lead to impoverished social conditions,[5] the economic data instead suggest a broad alignment between private interests *and* general public welfare – an era indicative of an economic "golden age."

The factors underlying this economic success are less straightforward than the data suggest. Different views have been put forward to explain the postwar golden age of capitalism without yet any consensus. Locating the success in various political compromises between classes, one branch of literature places the focus on *institutions* set in place after the Great Depression. According to this view, a set of distinct postwar accords between the government, capitalists, and workers underpinned robust growth in corporate profitability and investment by creating a mix of competition, cooperation, and stability in the economy (Bowles et al. 1986; Gordon et al. 1983; Gordon et al. 1987; Reich 2008). These accords became dysfunctional during the 1970s when new economic realities and class conflict could no longer be reconciled with the institutions they supported (Kotz 1987; McDonough et al 2010; Lippit 2014). Yet the precise mechanism that tamed competition, engendering cooperation has been left inadequately developed within this literature.

Others suggested that postwar economic prosperity was due in part to the institutionalized alignment between mass production and consumption after the Great Depression in the United States (Piore and Sabel 1984; Lipietz 1986). Noting that the postwar economy was characterized by an *intensive* regime of capital accumulation (i.e., mass production) combined with a *monopolist* mode of regulation, Aglietta (1979) and

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[5] "Capital asks no questions about the length of life of labor-power. What interests it is purely and simply the maximum of labor-power that can be set in motion in a working day. It attains this objective by shortening the life of labor-power, in the same way as a greedy farmer snatches more produce from the soil by robbing it of its fertility (Marx 1992, p.376)."

Jessop (1995) suggested that widely distributed economic gains contributed to high levels of aggregate spending. During the golden age, compromises between classes with respect to the distribution of economic surplus, far from constricting profitability and investment, gave rise to prosperity.[6]

A newly emergent body of work explores how institutions – encompassing those broadly defined to include worker rights and safety, environmental, financial, as well as industry-level regulation – support the pursuit of *enlightened self-interest* for various economic actors. Enlightened self-interest is the recognition that what is collectively beneficial can also be individually beneficial provided that the costs of cooperation are equally distributed.

Recent literature on economic governance (Williamson 1979, 1981, 2005; Dixit 2004, 2009; Scott 2011, 2012) has attempted to articulate ways to engender unification of various interests among economic actors – that is, to support enlightened self-interest in a competitive economy. By striking a balance between private interests (e.g., robust capital accumulation) and public welfare (e.g., gain of the average worker), governance institutions represent a system of activities or structures designed "to achieve collective goals through the benefits of collaboration and the costs of sanctions" (Wilke and Wilke 2012). Ugur and Sunderland write that "'institutions as governance structures' are a system of rules that enable economic actors to avoid sub-optimal [sic] collective action outcomes" (Ugur and Sunderland 2011, p.4). These systems-of-rules have the potential to support a common unity among agents who have heterogeneous and conflicting interests by serving as a *commitment device* (Schelling 1981) – a mechanism around

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[6] Brenner and Glick (1991) provide a comprehensive review and critique of this literature.

which a convention of cooperation can be nurtured and maintained. For instance, by using "law" (a formal institution) as a commitment device, Acemoglu and Jackson demonstrate how cooperative norms and other informal institutions evolve in response to its effectiveness (Acemoglu and Jackson 2014). They find that when informal institutions are in conflict with laws, the commitment device fails in its intended effect of engendering lawful behavior. Dixit (2014) employs a similar model that examines collective action in the business community. When agents are symmetric in their capacity to impose sanctions on cheating members, both formal and informal institutions can be effectively used in combination to enhance the fight of corruption. When agents are not symmetric in their retaliatory capacity, however, collective action is more problematic. Korkut Erturk, for instance, finds that *asymmetric power* alters the effectiveness of such commitment devices at the level of individual exchange (Erturk 2011, 2015), as well as at the level of the macroeconomy (Erturk 2012).

That macroeconomic and other national institutions provided a space for collective action for the "corporate elite" is a central theme in Mizruchi (2013). Serving as a platform where political consensus could be built on a variety of important issues – including those potentially divisive within the capitalist class[7] – institutions during the golden age prevented capitalists' collective class interest (i.e., enlightened self-interest) from being jeopardized by their own narrow interest for private gain.

According to Mizruchi, the demise during the early 1980s of these consensus-building institutions was due in part to an increase in economic power of capitalists relative to the government and workers. This allowed the elite to discontinue any

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[7] Whitt (1980) also explores the potential for cooperation between capitalists using case studies from the transportation industry during the 1960s and 1970s.

constructive accommodation of labor and to push an agenda of limited government, "two of the primary structures that had sustained [the corporate elite's] moderate post-war orientation, as well as its ability to act collectively to address its shared concerns" (Mizruchi 2013, p.179). Financial institutions and banks "also occasionally played a role in disciplining individual capitalists who engaged in erratic or deviant behavior (Mizruchi 2013, p.6)." In a similar vein, Thomas McGarity documents the decline in the effectiveness of formal institutions since 1980 (regulatory law in particular), concluding that a new social bargain is needed that restores the State's "capacity to steer the conduct of large economic institutions in socially desirable directions" (McGarity 2013, p.275).

There is ample historical evidence that members of the capitalist class were aware of the potential value of governmental regulation and similar institutions in creating a check on individual opportunism. A 1971 report titled *The Social Responsibilities of Business Corporations* published by the Committee for Economic Development (CED henceforth) is a case in point. Government regulation, the report suggested, opened a space for "corporate social responsibility" that could help circumvent the suboptimal provision of social and collective goods – the costs of which each capitalist must share – thereby making everyone better off.

Written by a motley assortment of the political and economic elite during the late 1960s and early 1970s, the report focused on the large corporations that "bear the burden of leadership within the business community" (CED 1971, p.9ff) in the United States. In addition to suggesting that the enlightened self-interest of the business corporation can "promote the public welfare in a positive way," the report goes on to list several ways this might be accomplished. "There is broad recognition today that corporate self-interest

is inexorably involved in the well-being of the society of which business is an integral

part, and from which it draws the basic requirements needed for it to function at all –

capital, labor, customers" (CED 1971,p.27). Not coincidentally, the period during which

this report was written was also one of relatively robust working class power.

     The report was motivated by two concerns. One was raising profitability *as well*

as public welfare through the pursuit of enlightened self-interest by capitalists, while the

other involved reducing the threat of pernicious governmental regulation, which could

materialize if the corporate community did not act in a socially responsible way.

According to the report, enlightened self-interest included

> expenditures to help improve community educational, health, and cultural
> facilities [that] can be justified by the corporation's interest in attracting
> the skilled people it needs [...] The doctrine of enlightened self-interest is
> also based on the proposition that if business does not accept a fair
> measure of responsibility for social improvement, the interests of the
> corporation may actually be jeopardized (CED 1971, p.28-29).

To support a unified capitalist class in their pursuit of enlightened self-interest, the report

suggested that government regulation play an integral part because it allows for

commitment to various social expenditures by inspiring the confidence that others are

likewise contributing their fair share. The authors thus recognized (and, as a focal point,

it is plausible to assume it was widely recognized by others as well) that regulation

functioned as a *commitment device* through which firms could achieve a cooperative,

jointly beneficial outcome. Individual capitalists, in other words, were enabled in their

pursuit of enlightened self-interest by obviating the concern that others were acting

opportunistically. In a memorandum included toward the end of the report, economist

Robert Nathan wrote,

> Enlightened self-interest is a highly desirable objective for business but it is not a major alternative to the role of government. It must be recognized that *the very nature of a competitive economy renders governmental intervention and regulation not only inevitable but proper.* [...] *It is the very essence of vigorous competition which necessitates some authoritative setting down of rules that maximize the fulfillment of public interest.* [...] The issue is not one of avoiding governmental or social sanctions. Rather, it is one of not only acquiescing in needed and reasonable regulations, but also of seeking constructive regulations while at the same time objecting to regulations that are more restrictive than necessary (CED 1971, p.69f, italics added).

Overall, the tenor of the report reflected the general economic optimism and the concern with social unrest characteristic of the late 1960s and early 1970s. With equal measures of confidence and vigilance, its authors suggested that "[t]he goals of American society can be realized only through a massive, cooperative effort of government, industry, labor, and education" (p.51) and that "regulatory measures are essential in many fields to insure [sic] that *all* businesses, not only the financially strong and more socially responsible ones, act in accordance with the public interest" (CED 1971, p.58). This same idea has been articulated more recently in work by Gar Alperovitz (2011, p.56) and by James Galbraith, the latter of whom noted that "regulation is the competitive instrument of the more progressive part of the business community, which wishes – for its own advantage – to force everyone to play by a common set of rules" (Galbraith 2008, p.129f).

Yet not all those writing on institutions agreed with the CEDs pragmatic approach, seeing instead the government and its regulatory apparatus as a cause of economic decline. Feldstein (1980), along with other prominent economists at the time, put much of the blame for poor economic performance from the mid-1970s onward on *too much* government in the economy. One branch of the literature that developed from this idea focused on the correlation between the growth of government and the relative

decline in key measures of economic performance during the 1970s. A theoretical explanation for this correlation was offered by Mancur Olson (1982), who suggested that the growth of economic coalitions and government regulation provided incentives for capturing national income more so than its increase. The thrust of Olson's argument was that as countries age they accumulate distributional coalitions, the members of which become intent on pursuing their narrow objectives as opposed to broader public goals.[8] These coalitions in his view become entrenched in the bureaucracy of mature institutions, diminishing the productivity of the economy.

Olson's basic approach to understanding dysfunctional institutions remains influential today. In a recent book, Ferguson (2013) looked at the way in which regulatory institutions restrict the capacity for economic growth and stability. Ferguson suggests that overly complex regulations in conjunction with lax enforcement (and non-punishment) explain why economic institutions are today dysfunctional. His solution is to simplify regulation and to strengthen substantially enforcement, raising penalties for running afoul of the rules (Ferguson 2013, p.74ff). Writing from a different literature (political science), Peter Schuck reaches the same conclusion. He suggests that voluntary regulatory compliance combined with a threat of punishment sufficient to deter violations are both important preconditions for institutional autonomy *and* successful regulatory outcomes when government programs interact significantly with market processes (Schuck 2014, p.226). Interestingly, the solutions proposed by Ferguson and Schuck are a throwback to the "make business follow its enlightened self-interest" doctrine of the 1971 CED report. They do not, however, address the complications that arise from "regulatory

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[8] See also Alperovitz (2011, p.30).

capture," that is, what happens when regulatory institutions lose their autonomy with respect to the private interests they are supposed to regulate.

A recent empirical literature delves more deeply into the relationship between institutions and economic performance (growth) from an historical and comparative perspective (Knack and Keefer 1995; Rodrik 1999; Acemoglu and Johnson 2005). This literature explores the role of institutions in economic prosperity by raising intriguing questions with respect to the manner in which differences in economic or political power enhance or stifle this potential for growth. A question of *endogeneity* lies near the center of this research program. Do institutions increase economic growth or do economic conditions create and sustain a variety of successful institutions? On one hand, it is recognized that "[e]conomic institutions matter for economic growth because they shape the incentives of key economic actors in society" (Acemoglu, Johnson, and Robinson 2004, p.2). On the other, this relationship "may reflect the reverse influence of economic growth on institutions or the simultaneous influence of omitted variables on both economic output and institutions" (Albouy 2012).

In a widely cited paper, Acemoglu, Johnson, and Robinson (2001) attempt to overcome the endogeneity problem by using the concept of "settler mortality" as an instrumental variable for institutions. Looking at areas of North America settled by Europeans, the authors find that two distinct sets of conditions emerged because of differential rates of mortality. In areas of colonization with a high mortality rate, extractive institutions evolved due to the rush to extract wealth as quickly as possible. At odds with broad-based economic growth and development, these institutions also tended to concentrate wealth through time by placing few if any constraints on economic power.

In geographic areas more conducive to long-term settlement (i.e., lower mortality rates), investments in infrastructure were more pronounced and systems to protect property rights led to a more effective constraint on those holding economic and political power. The latter underlying institutions persisted through time, ultimately leading to two distinct paths of economic growth and development.[9]

As noted, the distribution of economic power is an important determinant with respect to which institutions emerge because substantial concentration of power can at best engender institutions which are socially inefficient, and at worst, those which maximize the private income of those holding power at the social expense (Acemoglu et al. 2004, p.3ff). Yet, institutions can also function as a *constraint* on economic power if they develop in a way that assigns power to those with an interest in distributed prosperity or economic growth more broadly. Acemoglu, Johnson, and Robinson (2005) explore this latter idea in terms of the differential institutional and economic development of nations with access to Atlantic trade from those without. Their central finding is that an expanding global market and base for economic growth was linked with the rise of institutions favoring "nonabsolutist" rulers over the period 1500 to 1850. They suggest that not all nations with access to the Atlantic followed the same pattern of economic growth, however, and hypothesize "that Atlantic trade generated large profits for commercial interests in favor of institutional change in countries that met two crucial preconditions: easy access to the Atlantic and nonabsolutist initial institutions" (Acemoglu et al. 2005, p.562). One conclusion to be drawn from this literature is that

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[9] Although still contested, the results of this research are consistent with Engerman and Sokoloff (2000).

some degree of circular feedback between power, economic growth, and institutions accompanies economic development.

1.2 Contribution of this Dissertation

This dissertation is a contribution within a general institutional approach. In contrast to the literature on institutions, however, the research attempts to locate more precisely the institutional mechanisms supporting enlightened self-interest. The thesis is that in the face of intense capitalist competition during the golden age, regulatory institutions of the State functioned as a commitment device, allowing capitalists to act in their enlightened (as opposed to narrow) self-interest. Of course, the capitalist class unity engendered by this commitment device was not immune from changing social conditions. It was new social and economic conditions that emerged during the 1970s that prompted the capitalist class to push for economic and regulatory reforms, effectively dismantling the commitment device. One such reform (discussed below) was a massive restructuring of State institutions, embodied in the Civil Service Reform Act of 1978. These and other reforms, in conjunction with a deregulatory economic program introduced in the late 1970s and early 1980s, succeeded in raising *individual* capitalists' rate of profit not so much through improved economic performance as through increasing their power vis-a-vis labor and the government, but also fragmented their unity in the process (c.f. Mizruchi 2013). Not surprisingly, with the weakening of the regulatory apparatus of the State, the pursuit of enlightened self-interest gradually gave way to free riding on others' cooperation as the dominant business strategy. James Galbraith saw this as the purpose for what he termed the *Predator State*, which "is a coalition of relentless opponents of the

regulatory framework on which a public purpose depends" (Galbraith 2008, p.131). Yet, in addition to a comparatively lower *average* profit rate, one unintended consequence was the erosion of the elite's capacity to act in its collective class interest, let alone the public interest.

With the fragmentation of the economic elite, the divergence between private profit and social welfare – a feature prominent prior to the First World War in advanced capitalist countries – reemerged. As each individual capitalist now acts on their narrow (as opposed to enlightened) self-interest, collective economic costs – financial crises, environmental, health and welfare of labor, and so forth, have begun to mount. Although such costs are shouldered mostly by citizens, one of their underlying causes is the disunity of the capitalist class; it is an important source of political and economic dysfunction in the economy today.[10]

This research explores what accounts for the State's ability to provide capitalists with a commitment device that ensures that acting on one's enlightened self-interest pays off. It revisits the theory of the State from this particular angle and emphasizes the importance of the autonomy of regulatory institutions in supporting a unified capitalist class. Building on previous theoretical work in club theory (e.g., Buchanan 1965), the research conceptualizes the State as a "club" (Erturk 2012), having the potential to unify capitalists and prevent free riding on the collective costs stemming from capital accumulation (c.f. Whitt 1980). As suggested in the epigraph above, competition can in

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[10] Several factions of the capitalist class have been experiencing record profitability in recent years in spite of these rising collective costs. This does not mean that the accumulation of such costs is consistent with their enlightened self-interest, as the full economic effects of recurrent financial crises and of environmental collapse is unknown.

fact engender unity if the former is well regulated; that is, the boundaries of competition are well known and enforced.

A game-theoretic model is developed with respect to the way in which the intensity of regulation functions as a commitment device (i.e., boundary), thereby increasing the number of willing cooperators. Well-defined and enforced regulatory boundaries are important for preventing free riding on collective costs, as well as in apportioning costs among club members while excluding outsiders from sharing in the benefits of cooperation. Club boundaries can thus take the form of national borders and regulatory rules and institutions, including restrictions on capital mobility. Along with the weakening of national boundaries, regulatory institutions lost credibility and effectiveness in the early 1980s, and without that, neoliberal "capitalism entailed little capacity to organize corrective collective action for the costs it externalized (Erturk 2012, p.4)." Profitable collective action, in other words, became much more problematic as individual capitalists no longer believed the regulatory apparatus was a credible, binding constraint.

The dissertation fills an empirical gap in the literature on the State and its *relative autonomy* from capitalist competition.[11] It empirically estimates the relationship between the political composition of the State and the rate of profit in eleven United States industries. Since the State's relative autonomy with respect to individual capitalists determines the credibility of the commitment device, it also determines overall cooperation in the economy. Findings indicate that the relationship between the industry rates of profit and the State composition changed significantly after 1980 compared to the

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[11] Appropriately, Nicos Poulantzas (1973) used the term "isolation" to refer to capitalist competition, a term that lies in stark contrast to the unity depicted in the epigraph.

period before. This supports the view that the autonomy of the State before and its erosion after might have been an important causal factor in the success and decline of the golden age of capitalism. The empirical findings presented are consistent with predictions of the analytic model with respect to the economic impact of regulation.

1.3 Organization of the Dissertation

The remainder of this dissertation is organized as follows. Chapter 2 develops the intuition behind the endogeneity of institutions with respect to regulating market behavior. It is suggested that regulation stems from class conflict, and that under certain conditions the local-level institutions (face-to-face interactions and community sanctions and norms) need not be considered too dissimilar from those at the national-level (regulatory boundaries) in terms of how they can underlie successful collective action, provided the latter are free from capture.

Chapter 3 expands on the depiction of the State as a club and discusses the club theory literature more broadly to motivate the argument of the demise of successful collective action after 1980. A game-theoretic model is developed in this chapter to formalize the discussion. A side effect of regulation's diminished effectiveness was increased tax evasion, which undermined capitalists' once effective solution in dealing with their collective costs. This also caused enhanced *re-regulation* in the economy as its relative payoff increased, ultimately leading to increased regulatory capture, or at least the perception thereof.

This contrasts with much of the economic literature on regulation that characterizes the dysfunction of State institutions as a problem of too much government

as opposed to the failures of markets as well as institutions. Providing a critical review of this literature, Chapter 4 bridges the theoretical discussion with the empirical model and findings of the dissertation reported in Chapter 5, assessing the State's relative autonomy. Chapter 6 concludes and summarizes the dissertation and suggests possible paths for future research.

CHAPTER 2

THE ORIGIN OF THE STATE AND ENDOGENOUS

REGULATORY INSTITUTIONS

2.1 Regulation and Class Conflict

Shaped by economic power and social conditions, institutions regulating

competition often develop endogenously within an economic system (Acemoglu et al.

2001; Acemoglu et al. 2004; Acemoglu et al. 2005; Engerman and Sokoloff 2000; Greif,

Milgrom, and Weingast 1994; Greif 2006). According to Karl Marx, regulatory

institutions of the capitalist State are determined by class conflict. Marx writes, "[t]he

establishment of a normal working-day is the result of centuries of struggle between the

capitalist and the worker" (Marx 1992, p.382). In addition to the well-known notion of an

institutional accord thought to be struck between the government, capitalists, and

workers, the idea that regulation is endogenous can help explain more explicitly the

mechanism producing a "moderation of inter-capitalist rivalry" (Gordon et al. 1987,

p.50).

The political organization of the class interest of capitalists is accomplished best

when the working class is strong enough to counter balance capitalist power. The ability

of the capitalist class to organize collective agency relies upon the emergence of

regulation – what Marx termed factory legislation, the effectiveness of which is a

function of the relative balance of power between economic classes. Marx wrote in the preface to *Capital*,

> Apart from any higher motives, then, the most basic interests of the present ruling classes dictate to them that they clear out of the way all legally removable obstacles to the development of the working class. For this reason, among others, I have devoted a great deal of space in this volume to the history, the details, and the results of the English factory legislation (Marx 1992, p.92).

Marx writes later in the same volume of *Capital* that

> Factory legislation, that first conscious and methodical *reaction* of society against the spontaneously developed form of its production process, is, as we have seen, just as much the *necessary product* of large scale industry as cotton yarn, self-actors and the electric telegraph (Marx 1992, p.610, italics added).

By "self-actors" Marx meant the intersection of individual capitalists *and* the laws of competition by which they are governed. These laws, originating as a byproduct of industry, were critical for private accumulation and for the maintenance of the average worker. By generating high social costs and other losses that each capitalist sought to avoid, too much competition between capitalists came to harm society.[12] Thus, factory legislation was the first conscious effort to regulate capitalist competition to constrain its socially harmful effects.

Marx saw factory legislation as collectively beneficial to the capitalist class because it was in their interest to abide by a uniform set of rules that circumscribed self-interest when harmful for all. Although regulation did place an upper limit on the length of the working day, the drawback of generalized factory regulation from the perspective of the working class is that it sped the concentration of capital and the overall development of the factory system (Marx 1992, p.635). "But by doing this," wrote Marx,

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[12] Refer to epigraph above.

"it also generalizes the direct struggle against its rule. While in each individual workshop it enforces uniformity, [… the effect of] regulation of the working day is to increase the anarchy and the proneness to catastrophe of capitalist production as a whole" (Marx 1992, p. 635). While solving one of capitalists' collective action problems (uniformity of competition), factory legislation of the working day also opened two others. Nevertheless, collective agency was made easier for individual capitalists once the drive for accumulation (valorization of surplus) had been restrained by working class power. Marx again used the word "reaction" to describe the social response to collective costs.[13]

> The immoderate lengthening of the working-day produced by machinery
> in the hands of capital leads later on to a reaction on the part of society,
> which is threatened in the very sources of its life; and, from there, to a
> normal working day whose length is fixed by law (Marx 1992, p.533).

Regulation stemming from working class power was embodied in the *Factory Acts*, acting as a counterpoise to capitalist power. By tempering the destructive aspects of capital accumulation and competition, the *Acts* were in fact an attempt to regulate society's *common pool resources* (i.e., health and education of labor power)[14], which benefit the capitalist class as a whole. Capitalist's

> unmeasured drive for self-valorization, shortens the life of the individual
> worker, and therefore the duration of his labor power [...] It would seem
> therefore that the interest of capital itself points in the direction of a
> normal working day (Marx 1992, p.377).[15]

By moderating competition and conflict, this regulation worked as a *commitment device* in the language of modern game theory as it ensured that *all* capitalists could have confidence that no one could skirt the social and economic rules that constrained the

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[13] Arguably, these lines of text provided Karl Polanyi (2001 [1944]) with the intellectual material for his concept of "double movement."

[14] An idea developed more fully in Chapter 4.

[15] Quotes from Marx (1992) p.92, p.377 (above), and p.408 (below) were brought to my attention thanks to Hans Ehrbar.

pursuit of self-interest and profit. The significance of the *Ten-Hours Bill* in England,

according to Marx, was that it unified capitalists' interests. Marx writes,

> Nevertheless, the principle had triumphed with its victory in those great branches of industry which form the most characteristic creation of the modern mode of production. Their wonderful development from 1853 to 1860, hand-in-hand with the physical and moral regeneration of the factory workers, was visible to the weakest eyes (Marx 1992, p.408).

The "principle" here referred to the balance of power between the working class and the

bourgeoisie, while "[t]heir wonderful development" referred to the Factory Acts.[16]

Although reflecting a variety of social and economic conditions, the economic regulation

of competition that supported capitalist class unity was determined in the last instance by

the extent to which the working class could erect barriers to its own exploitation in the

production process. This benefited the capitalist class by making it easier to spell out and

enforce the rules that promote the beneficial use of common pool resources. Marx's view

on this can best be seen in the final portion of the following quote on the *Factory Acts*:

> The necessity for a generalization of the Factory Acts, for transforming them from exceptional laws relating to mechanical spinning and weaving — those first creations of machinery — into the general law for all social production, arose, as we have seen, from the path of historical development taken by large scale industry. […] There are two circumstances that finally turn the scale [against capitalist excess]: first, the constantly recurring experience that as soon as capital is subjected to state control, even at a handful of points on the periphery of society, it seeks compensation all the more unrestrainedly at all other points; and second, *the cry of the capitalists for equality in the conditions of competition, i.e., the equality of restraint on the exploitation of labor* (Marx 1992, p.621, italics added).

The opportunistic exploitation of labor is a case in point of a disunified capitalist

class (or club, as will be developed in the next chapter). The task of regulation, then, is to

hold individuals to their enlightened self-interest. Yet when regulatory institutions cannot

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[16] Interpretation here is thanks to Hans Ehrbar. See also the directly preceding sentence to the one listed above on p.408 of Marx (1992).

or do not rein in opportunism, society's common pool resources (e.g., *labor power*) are subject to over-extraction, a classic collective action problem. The health and education of labor power are examples of the collective costs that must be shared by the capitalist class as a whole, and it is in the enlightened self-interest of capitalists to husband and protect these resources. However, *recognizing* their enlightened self-interest is different from their *ability* to act on it, given that the latter requires unified collective action. Acting on their enlightened self-interest depends in part on the capacity of the State's regulatory institutions to keep individual capitalists in check. This, in turn, depends on the State's relative autonomy from individual capitalists.

All of this is not to say, however, that a unified capitalist class does not exploit the working class or that social welfare can ever be maximized under capitalism. Indeed, the capitalist mode of production is built on profit, which represents the extraction of surplus value from labor due to the divergence between the use-value and the exchange-value of labor power. Two contradictory tendencies thus result from regulation of the capitalist factory system. On one hand, regulation equalizes the competitive conditions for capitalists with respect to extracting surplus value and thus speeds the accumulation process. On the other hand, regulation organizes the working class through a more generalizable struggle against capital.

2.2 Recent Neoclassical Literature on Institutions

Although delving much more deeply into the actions of atomistic individuals, more recent neoclassical theory of State institutions borrows much from Marx's original understanding. Avinash Dixit writes,

> [t]he purpose of institutions […] is to induce individuals to take cooperative or honest actions that achieve and sustain mutually beneficial outcomes in their economic interactions, countering the temptation of each individual to take opportunistic or cheating actions that promote his interest at the expense of the aggregate good (Dixit 2004, p.59).

Coinciding with the rise of transaction-cost economics (e.g., Coase 1937, 1960; Williamson 1979, 1981, 2005), there has been a resurgence in the literature over the last two decades with respect to the capacity for institutions to govern competition in a way that promotes the common good. This "new institutionalist" literature places focus on two basic categories for understanding the way private agents address collectively the costs of competition, broadly falling under the headings of *private-order* and *public-order* institutions.

Private-order institutions – like those used successfully by ancient traders to manage enforcement costs and to promote collective action (Greif, Milgrom, and Weingast 1994; Greif 2006) – can be highly efficient in regulating competition because of their context-specific attributes. Due to the potential costs of using a formal legal system (Dixit 2004, p.25), however, these private-order institutions consist of norms and sanctions that operate largely outside of formal political organization. The effectiveness of private-order institutions is constrained by group size. As group size increases, the collective costs of enforcing property rights rise just as the probability of detecting opportunism decreases. Public-order institutions, by contrast, – such as modern courts, regulations, police and laws – regulate competition through the formal framework of institutions of the State (see North 1981, 1990). These institutions have the advantage of scale economies in enforcement, but this particular type of regulation is itself less efficient with respect to private-order institutions because of a larger group size, which

entails efficiency loss as well as a diluted capacity to levy sanctions on opportunism.

Historically, the role played by institutions in regulating competition and creating unity among economic actors has been important for growth and economic development in nation-states (Ogilvie and Carus 2014). Douglass North wrote, "the inability of societies to develop effective, low-cost enforcement of contracts is the most important source of both historical stagnation and underdevelopment" (North 1990, p.54). As was the case with Grief's traders (cited above), private-order institutions arise in order to fill this political-organizational void. A recent tangible example of how private-order institutions organize and provide unity to the capitalist class at the local-level can be found in Whitt (1980). In a piece titled *Can Capitalists Organize Themselves*, Whitt suggested capitalists in San Francisco in the late 1960s and 1970s used a set of institutions (i.e., norms and sanctions and formal rules) to solve a collective action problem with respect to acting in their shared interest, namely, the financing of physical infrastructure and related projects. The case studies used by Whitt indicate that, particularly at the local level, capitalists used intraclass mechanisms to specify the way each capitalist would share the costs and benefits of proposed projects. There appears, according to Whitt's analysis, to be a precise hierarchical ordering of lobbying effort, with capitalists spending in proportion to their expected benefit and rarely engaging in head-to-head competition with one another. Whitt suggested that capitalists can cooperate using "intraclass mechanisms, often eliminating the need for these issues (p.52)" to be resolved by an outside agent and that "concrete strategies are generated, often in personal, face-to-face groups within the business community" (Whitt 1980, p.57). According to Whitt, an improvised local *fraternity* or *club* solved a collective action

problem among capitalists. This allowed individual capitalists to reap the benefits of cooperation while also institutionalizing their ability to sanction those who attempted to free-ride on the collective costs of infrastructural investment.

Whitt's research holds light to the endogenous nature of regulatory institutions and the origin of the State itself. Once institutionalized and its boundaries defined, the local club of capitalists begins to function as an exogenous enforcer of the rules of competition to individual businesspeople, acquiring a history and dynamic of its own. What happens at a national level might not be qualitatively different from the local level. Yet because face-to-face intraclass channels of interaction are less effective at the national level, capitalists face stronger incentives to defect from cooperation or try to capture the process by which rules are made and enforced. Indeed, the transaction-costs of mobilizing class interests and regulating competition under private-order institutions at the national level are prohibitive. This is why there are immense scale economies, suggested North, for a State with coercive power to act as a third-party enforcer to every contract (North 1990, p.58). Enforcing contracts and fostering unification at the national level can be made more efficient with a robust and autonomous third-party mechanism (c.f. Ayres and Braithwaite 1991). This in turn makes acting in one's *enlightened* self-interest the dominant business strategy, provided these institutions are impartial.

2.3 The Origin of the State

The origin of the State can be thought of as a means to unify actors within its boundaries in an effort to organize collective agency. Robert Carneiro defined the State as "[a]n autonomous political unit, encompassing many communities within its territory

and having a centralized government with the power to collect taxes, draft men for work or war, and decree and enforce laws" (Carneiro 1970, p.733). Carneiro suggested that the political organization of the State is due to two types of circumscription, scarce land circumscribed by natural boundaries and by social boundaries. He suggested that population pressure leads to intensified food production and the search for new land. This search for land leads increasingly to conflict, often driving away weaker villages and populations and augmenting the power of the victors. When fleeing is not possible, people are forced to abide by the rules and institutions of the conquerors. Carneiro therefore found the State to be *predatory*, writing that "[f]orce, and not enlightened self-interest, is the mechanism by which political evolution has led, step by step, from autonomous villages to the state" (Carneiro 1970, p.734). Yet regulating this conflict is collectively costly to the ruling elite, and Carneiro does not explicitly incorporate these costs into his theoretical framework.

Douglass North emphasized the predatory potential of the State in connection with the cost of the enforcement of rules, contracts, and collection of taxes. North described the State in general as "an organization with a comparative advantage in violence, extending over a geographic area whose boundaries are determined by its power to tax constituents" (North 1981, p.21). Taxes that are necessary for the maintenance of the State "are inversely related to the perceived legitimacy of the existing system" (North 1981, p.53). North defined the predatory State as the type of organization that relies on its capacity for violence to ensure the enforcement of rules and collection of taxes. He also recognized the potential that "those who run the state will use that force in their own interest at the expense of the rest of society" (North 1990, p.59). The ruler (or

ruling group) will define rules and property rights in order to maximize their private benefits, particularly if constituents lack the capability to impose costs on the ruler for making illegitimate rules or setting the tax rate too high.

By contrast, if constituents can in fact impose costs on the ruler, this predatory potential can be kept in check. The ruler will then choose property rights that coincide with his/her long term (enlightened) as opposed to short-term (narrow) self-interest. This *contract theory* is North's second view of the State, according to which the State arises because of the initial gains to voluntary contracting between the ruler and constituents and between constituents themselves. The State enforces contracts that limit the actions of all constituents, and acts as a third-party in matters between citizens. A well-functioning State that promotes the common good will use its power to coerce in an enlightened way, with the provision that those who rule have a commitment device engendered by constituent's ability to impose costs.

The link connecting the two theories of the State, according to North, is the distribution of violence potential, which delineates the contractual relationship between the ruler and constituent. In the contract theory of the State, there is a symmetric distribution of power between ruler and constituent groups, such that the State "becomes the field on which the battle for control of its decision-making power is fought" (North 1981, p.22). The capacity of constituents to impose costs on the ruler will ensure the maximization of social income in addition to the ruler's private income. In the predatory depiction of the State, on the other hand, there is an unequal distribution of power between the two groups, which ensures the ruler will focus on maximizing private at the expense of social income.

The State's political organization therefore fosters economic growth and economic development through its specification of property rights, which also codify its ability to tax constituents. According to North, economic growth can reach its full potential when the ruler's maximization of private income overlaps with the maximization of social welfare. However, to the extent the ruler promotes its private interests at the expense of social welfare, the costs of maintaining existing property rights and tax collection will tend to rise. Internally, the ruling group faces a principal-agent problem with respect to those responsible for carrying out enforcement and tax collection. To solve this, the ruler will grant monopoly income rights to some of its agents in order to better align their interests with hers. Given the difficulty of any given set of monopoly rights perfectly aligning the two sets of interests, various private and public-order institutions arise to minimize enforcement costs and to "realize cooperative outcomes" (North 1990, p58).

Greif, Milgrom, and Weingast (1994) find historical evidence that supports North's depiction of the State. The authors suggest that the State often fails to use its power in an enlightened way, and privately beneficial economic outcomes required that the predatory potential of the State could be checked. Private agents therefore required a commitment device, constraining their actions to engender collectively beneficial outcomes. In particular, the authors suggested that merchant guilds (private-order institutions) fulfilled this function for private wealth holders vis-à-vis the State during the late medieval period (Greif et al. 1994). Because the trust of various long-distance merchants was an important underlying characteristic of prosperous trading areas, Greif et al. suggest that "merchant guilds emerged with the encouragement of the rulers of

trading centers to be a countervailing power, enhancing the ruler's ability to commit and laying an important institutional foundation for the growing trade of that period" (Greif et al. 1994, p.746). In essence, private-order institutions emerged as a commitment device for rulers to refrain from (potentially) malicious actions in a repeated trading-game setting.

2.4 Marxist Theory of the State

The Marxist literature on the capitalist State also suggests that a gap will likely always exist between private interests (e.g., accumulation) and public welfare (e.g., health of labor power). There are two main strands of thought within this literature.[17] The first suggests that the economically dominant class in society holds State power, and therefore its interests will be most prominent in the formation of economic and social policy and in the enforcement of rules and contracts. The State, according to this view, is a political instrument of coercion in the hands of the class that monopolizes the economic resources of society. Ralph Miliband suggested that there are five core institutions of the State apparatus through which dominant classes exert control. These include "the government, the administration, the military and the police, the judicial branch, sub-central government and parliamentary assemblies – which make up "the state," and whose interrelationship shapes the form of the state system" (Miliband 1969, p.50). The main implication of this "instrumental" view is that private interests and public welfare are not likely to align. One problem that arises from this view of the State concerns how the dominant faction within the capitalist class solves an internal collective action

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[17] Although more commonly referred to as instrumentalist or structuralist theories of the State, Foley (1978) has instead labeled them as functionalist or reductionist, in particular when describing the narrower category of State expenditure (see also O'Connor 1973).

problem with respect to which particular faction makes the rules and obtains the tax

revenue.

In the second strand of Marxist thought on the capitalist State, this internal

collective action problem is less of an issue. Rather than placing the focus on a committee

of capitalists making the rules, the structural relations and institutions that arise from the

nature of capitalist production are emphasized. Nicos Poulantzas, for instance, suggested

that institutions of the State arise like scaffolding from a particular mode of production

set in historical time (Poulantzas 1973, p.15). Although class conflict takes place within

the institutions of the State, the State is itself *relatively autonomous* from the competitive

jockeying that takes place between economically dominant factions of capitalists.[18] By

translating autonomously overall class interests at the political level, the State ensures

that competition will not become detrimental to capitalists' long-term collective class

interests. Poulantzas writes,

> What then is the role of the capitalist class state in this context? It can be
> stated as follows: it takes charge, as it were, of the bourgeoisie's political
> interests and realizes the function of political hegemony which the
> bourgeoisie is unable to achieve. But *in order to do this, the capitalist
> state assumes a relative autonomy with regard to the bourgeoisie.* […] For
> this relative autonomy allows the state to intervene not only in order to
> arrange compromises vis-à-vis the dominated classes, which, in the long
> run, are useful for the actual economic interests of the dominant classes or
> fractions; but also (depending on the concrete conjuncture) to intervene
> against the long-term economic interests of *one or other* fraction of the
> dominant class: for such compromises and sacrifices are sometimes
> necessary for the realization of their political class interests (Poulantzas
> 1973, p.284f, italics in original).

Because the capitalist class is characterized by competition and therefore disunity,

factional divisions need to be resolved in such a way that they do not jeopardize the long-

term process of capital accumulation. This is accomplished "through the relative

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[18] Poulantzas (2008) also described the State as a "platform" for, or "crystallization" of, conflict.

autonomy of the state, through a state structure which [sic] is capable of transcending the parochial, individualized interests of specific capitalists and capitalist class fractions" (Gold et al. 1975). Adam Przeworski explained this most clearly when he wrote that "the task of reproducing capitalism cannot be assumed by the bourgeoisie; it can be accomplished only by the state acting against objections of individual firms. To maintain capitalism the state must be independent from the influence of capitalists" (Przeworski 1990). This view of the State rejects the notion that the State is an instrument wielded by the ruling class, at least directly. Instead, the primary function of the State is to lay the foundation for (but not specifically implement)[19] the conditions that support profitable capital accumulation and the long-term maintenance of domination of the society by the capitalist class as a whole.

To reconcile these competing conceptions of the State, Gold, Lo, and Wright suggested that the State "must be conceived both as a structure constrained by the logic of the society within which it functions and as an organization manipulated behind the scenes by the ruling class" (Gold et al. 1975, p.46). This means that during certain historical periods the State is more or less autonomous from factional competition than it is during others. Different institutions within the State may also function according to a separate logic, with one set of institutions responding to structural constraints while another set responding to instrumental manipulation. Similarly, instead of defining the State within two polar categories, David Harvey (1976) argued that the State could be defined by the minimal functions it must perform to sustain capitalism, irrespective of who is in control. He noted that the capitalist mode of production has direct requirements

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[19] Indeed, Nicos Poulantzas writes of the State, "*the institutions or the apparatuses do not 'possess' 'power' proper but do nothing but express and crystallize class powers*" (Poulantzas 2008, p.242, italics in original).

of the State, indicating that "the equality and freedom of exchange must be preserved,

property rights must be protected and contracts enforced, mobility preserved, the

'anarchistic' and destructive aspects of competition must be regulated, *and the conflicts*

of interest between fractions of capital must be arbitrated for the 'common good' of

capital as a whole" (Harvey 1976, p. 84, italics added).

In contrast to this view, Henry (2008) suggested that the State "emerges with class

society as an instrument of oppression, not as a means of reconciling what are

fundamentally *irreconcilable* class conflicts" (p.23, italics in original). Henry's view,

based on his reading of Marx and Engels, suggested that the State is a "socially

determined arrangement [that] was constituted by the instruments of coercion, both

physical and ideological, with which the dominant economic class coerced other social

classes" (Henry 2008, p.13). This analysis, however, is only partially correct for it

ignores the State's *multifaceted* character, which is highlighted well in the following two

passages by Fredrick Engels.

> [I]n order that [...] classes with conflicting economic interests, might not
> consume themselves and society in sterile struggle, a power seemingly
> standing above society became necessary for the purpose of moderating
> the conflict, of keeping it within the bounds of 'order'; and this power,
> arisen out of society, but placing itself above it, and increasingly
> alienating itself from it, is the state (Engels 1884, p.753).

However, while the State arises from conflict it also comes to mediate it as suggested.

The "economically dominant class," which seeks to exploit other classes as suggested by

Henry and others, also rules it.

> As the state arose from the need to hold class antagonisms in check, but as
> it arose, at the same time, in the midst of conflict of these classes, it is, as a
> rule, the state of the most powerful, economically dominant class which,
> through the medium of the state, becomes also the politically dominant
> class, and thus acquires new means of holding down and exploiting the

oppressed class. [...] [T]he modern representative state is an instrument of exploitation of wage labour by capital. *By way of exception, however, periods occur in which the warring classes balance each other so nearly that the state power, as ostensible mediator, acquires, for the moment, a certain independence of both* (Engels 1884, p.753, italics added).

During exceptional circumstances, a balance of class power contributes to a relatively autonomous State capable of imposing mutually beneficial restrictions on the capitalist class. This better aligns their long-term interests, despite one faction rising to dominance. This idea is distinct from the two views of the State previously articulated, the first as a simple instrument of domination and the second as a superstructure arisen from a mode of production. Instead, the State's power seen from this angle is as an "ostensible mediator" that regulates competition and can provide conditions for class unification. The word *ostensible* is used because the State must be "perceived" as an *impartial* mediator.

There are, therefore, multiple views of the capitalist State. First, it is a power arisen from and towering above society as the structuralist notion of base-superstructure suggests. Second, it is an apparatus controlled by the dominant economic class to exploit and exclude others. Third, among capitalists it must be perceived as a mediator, "keeping [competition] within the bounds of 'order'" (Engels op. cit.). The State is not only "an organization of the possessing class for its protection against the non-possessing class," (Engels 1884, p.754) but also an *organization of the possessing class for its protection against itself.*

Although distinct, there are parallels between North's depiction of the State and that described within the Marxist literature, the latter focusing on the role of *class* as opposed to the *individual.* North's view suggested that rulers, through State institutions,

define property rights and contracts along with their enforcement and can engage in predatory rent extraction by doing so, lowering the potential for economic growth. How the constituency deals with this problem is determined by the distribution of power, and in turn, their capacity for collective action. The capacity to retaliate is what keeps the actions of the ruler in line with her long-term interests. Marx suggested that when working class power is high, the ability of the capitalist class to act in their enlightened self-interest is also made easier. When workers have the capacity to impose costs on the capitalist class, the latter's capacity for collective action is increased as is their ability to act in their long-term class interest.

The foregoing raises the intriguing question whether an alignment between private accumulation and public welfare could have evolved in the U.S. Was the "golden age of capitalism" one of these "exceptional" times where class conflict was balanced? Did the balance of class power allow economic regulation to support capitalists enlightened self-interest? If so, how, and why did it dissolve? Was the State relatively autonomous during the golden age? Was it after?

CHAPTER 3

REGULATION AS A COMMITMENT DEVICE

When autonomous from economic classes and interest groups, the State has the

potential to impose mutually binding, socially beneficial restrictions on the capitalist

class through its regulatory institutions. These restrictions can enable each individual

capitalist to pursue its enlightened as opposed to narrow self-interest, thus unifying the

capitalist class around its collective interests. This chapter develops a descriptive

narrative of the success and breakdown in the agency of the capitalist class and provides

historical evidence through the lens of taxation. Predictions from an analytical model of

regulation are consistent with this narrative. The model details the way regulation can

function as a commitment device, which, at its most effective, increases the likelihood of

successful cooperation.

3.1 Club Theory

Public goods historically have played an important yet theoretically problematic

role in economic analysis. Adam Smith, writing in *An Inquiry into the Nature and Causes

of the Wealth of Nations* (Smith 1967 [1776]), found the provision of public goods to be

an essential task of government. Samuelson (1954, 1955) outlined the modern

neoclassical economic theory of public goods, and Olson (1971) expounded the intrinsic

free rider problem involved in their production. The continuum of economic goods runs from private goods to purely public goods. Public goods – like a lighthouse or national defense – are goods that are nonexclusionary in use and nonrivalrous in consumption, often exhibiting high levels of market failure. Private goods by contrast are both excludable and rivalrous, characterized by a low degree of market failure. Between public and private lie a continuum of goods, which can be classified by their rivalry and excludability as displayed in Table 3.1. Shifts in technology or changes in population can alter the categorization of goods as to whether the excludability of the benefits they provide or their rivalry in consumption change. When public goods become rivalrous – as advances in hunting technology and population growth had conceivably turned public goods into common pool resources – competition for resources intensify, and those more powerful have both an incentive and the ability to exclude rivals from resources (c.f. Carneiro's depiction of the origin of the State). This type of exclusion requires some political organization to enforce boundaries that clearly delineate *insiders* from *outsiders*. This is important because, as Ostrom (2000) elaborates, resource over-extraction cannot otherwise be prevented. Insiders enjoy nonrivalrous access to resources but face sanctions if they fail to refrain from its opportunistic overuse. In more general terms, a social group or a society solves a common pool resource problem it faces by organizing itself politically in such a way as to (i) exclude outsiders, (ii) define a set of

Table 3.1. Categorization of goods based on rivalry and excludability

	Excludable	Nonexcludable
Rivalry	Private Goods	Common Pool Resources
Non-rivalrous	Club Goods	Public Goods

rules of conduct for insiders designed to prevent resource over-extraction, and (iii) impose sanctions on those who violate the rules.

The exclusion of outsiders implies a nonrivalrous resource use (consumption) for the insiders, whose access is conditional on meeting a set of obligations defined by the terms of their group membership. Technically, the political organization thereby formed is a *club*, producing (or provisioning) *club goods* (which are excludable but nonrival) as opposed to public goods which are neither excludable nor rivalrous. Clubs are collective organizations that provide a good or service to its members and prevent outsiders (as well as opportunistic insiders) from free riding on the good or service through a set of rules of conduct. Sandler and Tschirhart define a club as "a voluntary group deriving mutual benefits from sharing one or more of the following: production costs, the members' characteristics, or a good characterized by excludable benefits" (Sandler and Tschirhart 1997).

Although the literature on the economic theory of clubs developed in the 1960s beginning with research by Buchanan (1965), Sandler and Tschirhart (1980) find examples in the work of Arthur Pigou and Frank Knight.[20] The three essential components of a club[21] are (i) a club good (a continuous or discrete product or set of products), (ii) a marginal benefit in excess of the utility of nonmembership, and (iii) an exclusion mechanism or boundary that demarcates members from nonmembers and

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[20] An early critique and extension of Buchanan's original model can be found in Berglas (1976), which also was an indication of the technical direction the literature was moving during the 1980s. In particular, the heterogeneous membership conditions for efficiency and admission prices were incorporated into club theory by extending the concept of the *core* from microeconomic theory (Scotchmer and Wooders 1987).

[21] Sandler and Tschirhart (1997) specify six overall components of a club: membership must be voluntary; sharing results in crowding; there exists some exclusivity aspect whereby nonmembers are excluded; the number of clubs is determined by partitioning which implies competition among clubs; the presence of an exclusion mechanism; club goods must involve at least two simultaneous allocative choices (group size and provision level).

prevents crowding (or at least provides compensation at the margin for any crowding that occurs). Although the costs-per-member of club good provision fall as more members are allowed to join the club (and likewise rise as members exit), increased membership results in crowding, other things being equal. In order to compensate an existing member for the cost of increasing club size, a fixed fee (or per-use fee) is established. Clubs are particularly relevant when the benefit of an imperfect public good cannot be priced or assigned individually, or when there are substantial externalities associated with their provision (Cornes and Sandler 1986) that cannot otherwise be internalized.

The *technology of supply*, listed in Table 3.2, describes the collective provision of club goods. Four types of supply technology are prominent in the literature (Sandler 1992), and include summation, weakest-link, best shot, and weighted sum. *Summation* technology represents an aggregation of individual contributions, making its supply subject to the well-known prisoners' dilemma. While still able to share club benefits, overall provision will tend toward zero since each individual has an incentive to free ride on the contributions of others. A collectively suboptimal provision of the good therefore results unless the club has the capacity to sanction those acting opportunistically. *Weakest-link* technology of supply suggests that the smallest contribution will determine the overall provision level for the group. Larger club members thus have an incentive to

Table 3.2. Technology of Supply

Technology of Supply	Functional Form
Summation	$X = sum\ (x^i)$
Weakest-Link	$X = min\ (x^i, ..., x^n)$
Best-Shot	$X = max\ (x^i, ..., x^n)$
Weighted-sum	$X = (w^1 x^1 + w^2 x^2 + ... + w^n x^n)$, w in (0,1)

increase the provision levels of smaller club members. This can be individually costly for the larger members, which therefore gives weaker members the capacity to impose costs and prevent the larger members from acting opportunistically. In *best-shot* technology of supply, provision is determined by the largest contribution only. Similar to summation technology of supply, this technology is also characterized by free riding on collective provision of the good. *Weighted-sum* technology of supply, similar to standard summation technology, includes the potential for differential impacts of contribution levels. An example of weighted-sum technology of supply is oil spill clean-up efforts (Sandler 1992). Recent research by Sandler (2001) examined both the microeconomic and macroeconomic aspects of *international* public goods, which is the level at which these supply distinctions become most relevant. Clubs form for the purpose of addressing the collective provision of an imperfect public good in order to achieve a joint benefit. When the normal provision of the imperfect public good is suboptimal and characterized by free riding, clubs are particularly relevant as *organizational boundaries* (because of the exclusion mechanism). For an individual to voluntarily join the club and share the costs of provision, however, the club must provide a benefit in excess of individual costs. Much of the literature today extends Buchanan's (1965) original model of within-group optimization, which was summarized and updated by Sandler and Tchirhardt (1980; 1997). In what follows, I briefly summarize the depiction by Sandler and Tchirhardt (1980). The theoretical predictions obtained can help inform the remainder of the discussion on the cohesiveness and breakdown of the club.

Suppose group members are homogeneous and indexed $i \in (i,...,n)$, choosing levels of one private good, y, and a set of imperfect public goods X. The ith agent decides

whether to join the club, that is, decides whether to subscribe to the set of goods

available. Both y and X exhibit constant returns to scale in production. Let y be the

numeraire. The set of members, s, maximize utility subject to a production function C.

The ith individual's problem is to

$$\max U^i(y^i, X, s) \text{ subject to } C^i(y^i, X, s) = 0 \tag{1}$$

where $\dfrac{\partial C^i}{\partial x} > 0$ and $\dfrac{\partial C^i}{\partial y^i} > 0$ $\forall$ i. $x^i = X$ is the ith members consumption of the

(impurely) public good. Its equivalence with total provision, X, implies that each

individual uses the full quantity of the supplied good (Sandler and Tschirhardt 1980). y^i

is the ith member's consumption of the private good. U^i is increasing in x, y, and s when

s is small relative to total capacity, but decreasing when s is large relative to total

capacity as crowding occurs. This means that $\dfrac{\partial U^i}{\partial x} > 0$, $\dfrac{\partial U^i}{\partial y^i} > 0$, and $\dfrac{\partial U^i}{\partial s} > 0$ for small

levels of s, and $\dfrac{\partial U^i}{\partial s} < 0$ for large levels of s. These latter two assumptions imply there is

a tipping point beyond which an increase in-group size no longer increases utility at the

margin. This means the credibility of boundaries is a relevant (binding) consideration

when the group increases past some set limit, s*. $\dfrac{\partial C^i}{\partial s} < 0$ implies that costs fall as

membership increases (as more members share collective costs). Assuming that both

$U^i(y^i, X, s)$ and $C^i(y^i, X, s)$ are convex and twice continuously differentiable, the

Lagrangian is

$$L = U^i(y^i, X, s) - \lambda C^i(y^i, X, s) \tag{2}$$

The first-order conditions are

$$\frac{\partial L}{\partial y^i} = 0 = \frac{\partial U^i}{\partial y^i} - \lambda \frac{\partial C^i}{\partial y^i} \tag{3}$$

$$\frac{\partial L}{\partial X} = 0 = \frac{\partial U^i}{\partial X} - \lambda \frac{\partial C^i}{\partial X} \tag{4}$$

$$\frac{\partial L}{\partial s^i} = 0 = \frac{\partial U^i}{\partial s^i} - \lambda \frac{\partial C^i}{\partial s^i} \tag{5}$$

$$\frac{\partial L}{\partial \lambda} = 0 = -C^i(y^i, X, s) \tag{6}$$

By rearranging terms, the provision (equation 7) and membership (equation 8) conditions emerge.

$$\frac{\dfrac{\partial U^i}{\partial x}}{\dfrac{\partial U^i}{\partial y^i}} = \frac{\dfrac{\partial C^i}{\partial x}}{\dfrac{\partial C^i}{\partial y^i}} \tag{7}$$

and

$$\frac{\dfrac{\partial U^i}{\partial s}}{\dfrac{\partial U^i}{\partial y^i}} = \frac{\dfrac{\partial C^i}{\partial s}}{\dfrac{\partial C^i}{\partial y^i}} \tag{8}$$

which are equivalent to

$$MRS^i_{xy} = MRT^i_{xy} \, \forall i = (1,...,s) \tag{9}$$

$$MRS^i_{sy} = MRT^i_{sy} \, \forall i = (1,...,s) \tag{10}$$

The provision condition (equations 7 and 9) implies that individuals set the marginal rate of substitution between goods x and y with the marginal rate of transformation between the two goods. The membership condition (equations 8 and 10) states that the ith individual equates the marginal rate of substitution in group size, s, and private good, y, with the marginal rate of transformation between the two goods. This represents the marginal cost of an additional member. According to Sandler and Tschirhardt, "[i]f, at the margin, the club is breaking even in providing the public good, the sum of the members' marginal costs must equal the club's marginal cost of provision" which is "the usual Samuelson provision condition for public goods" (Sandler and Tschirhardt 1980, p.1484). Buchanan's original model predicted that the incentives for defecting from the club require only that members weigh the marginal cost of defecting against its marginal benefit, which in turn, have been shown to depend on whether the relevant boundaries are credible.

3.2 The State as a Club

A club can be thought of as a village collective (Lindberg 2009), a professional group or guild (Greif et al. 1994), exercise, health, and swimming facility (Mendoza 2012), a business or social organization (Whitt 1980), or a coalition of countries seeking solutions to environmental pollution (Nordhaus 2012). In addition, given that most public

goods it provisions would more accurately be called club goods, the State can itself be thought as a club (Erturk 2012). For instance, national defense, the quintessential textbook example of a public good, is technically speaking a club good. By definition, it entails protection of insiders from potentially belligerent outsiders. While nonrivalrous for any group member we call a citizen, it is exclusionary for everyone else. Erturk (2012) suggested that the same holds for many other social benefits and services citizenship entails one access to, including access to domestic labor power. The effectiveness of the State as a club depends also on its ability to set forth and enforce a set of rules of conduct (boundaries) that impose welfare enhancing and mutually binding restrictions on its internal members. Club boundaries organize member's interests at the political level. They also apportion the benefit and cost of investing in the club, sanction opportunistic defection, and exclude outsiders. Boundaries are essential for any club because they allow "participants to know who is in and who is out of a defined set of relationships and thus with whom to cooperate" (Ostrom 2000, p.149). When effective, the boundary itself is rarely challenged; instead, it serves as a commitment device enabling club members to refrain from opportunistic defection because they know that those who do not will face sanction.

The "golden age" of capitalism in the United States can be seen as an era when the club worked relatively well, mainly because regulation was taken for granted rather than challenged by the capitalist class (Chang 1997; CED 1971). Erturk (2012) suggested that by regulating access during the golden age, the State could husband and protect common pool resources by transforming them into club goods for the benefit of the capitalist class. With well-defined and enforced boundaries embodied in economic

regulation, large and small-scale mobilization of class interests was accomplished during the golden age, as investment in the commons was made profitable to members of the club (Erturk 2012). This task is more difficult to carry out at the global level, however, where political and economic boundaries are permeable. William Tabb (2004) attempted to address this complication by viewing global governance institutions as a *series* of clubs. Economic governance, suggested Tabb, consists of mechanisms for the coordination of common interests, and "[p]roviding such a regulatory framework and corresponding enforcement mechanisms are clubs which can be understood as providing public goods that reconfigure sovereignty" (Tabb 2004, p.143).

3.3 Historical Perspective

Although a variety of factors combined to determine cohesiveness of economic classes, some took a more prominent role than others. In the U.S., the State's capacity to unify class interests began to fragment when national and regulatory boundaries were made porous with increased capital mobility during the late 1970s (Erturk 2012; Ghai 1994). This in turn led to a host of secondary institutional effects stemming from the institutional arbitrage (and other rule changing) it made possible.[22]

The reasoning can be described as a simple story of supply and demand. During the 1970s, a rise in capital mobility increased demand for the relaxation of institutional rules and constraints deemed harmful to profits. This "deregulation" was not symmetric across the capitalist class, however, leading to increased institutional arbitrage (Kogut 1983; Witt and Lewen 2007) as each individual capitalist sought the lowest incidence of regulation and the lowest incidence of taxation. New institutions and rules of the game

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[22] The ability to play one set of rules against another for specific, individual benefits.

were enacted in response to this increased demand for new rules,[23] allowing some

capitalists (especially in finance) to gain a competitive advantage relative to others.

Minimizing their tax incidence also precipitated increased tax evasion (Kelly 2004;

Vernon 1998, Caves 2007; Gordon and Hines 2002). As capitalists began to evade taxes

during the 1980s, the brunt of collective costs fell disproportionally on the remaining

"cooperators." In other words, those playing by the rules ended up paying more than their

fair share of the costs of supporting the commons and domestic capital accumulation.

Impelled from a widely held perception of bloat and rigidity within the

government bureaucracy, significant legislative efforts in the late 1970s sought to reform

the structure and operation of State institutions. The Civil Service Reform Act of 1978

(CSRA) was the "most comprehensive reform of the federal civil service since the

Pendleton Act" of 1883 (Ingraham and Ban 1984, p.1; see also Ingraham and Colby

1982). Among other provisions, the centerpiece of the CSRA was the creation of the

Senior Executive Service (SES), designed to produce "an elite cadre of more flexible,

more mobile managers" (Ingraham 1984, p.18). These new managers were to be

governed by individual performance contracts that reduced job security in exchange for

the opportunity to compete for a fixed pool of bonus money and similar monetary

incentives.[24] Through their broad efforts to restore managerial authority and enhance

bureaucratic efficiency and productivity – the justification for which was grounded in the

scientific management literature – members of the capitalist class exerted substantial

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[23] Two examples of "new rules" are the Depository Institutions Deregulation and Monetary Control Act of 1980 and the Garn-St. Germain Depository Institutions Act of 1982, key pieces of legislation in the deregulation of the financial sector.

[24] Indeed, the text of the legislation called for a compensation package "measured on the basis of individual and organizational performance (including such factors as improvements in efficiency, productivity, quality of work or service, cost efficiency, and timeliness" (quoted in Ingraham and Ban 1984, p.325, with further detail on p. 338).

influence during the drafting phase of the CSRA (see, for example, CED 1978).

In effect, the CSRA was an institutionalized restructuring of the government bureaucracy toward a private sector, market-dictated approach to Statecraft. This approach implicitly prioritized methods of business administration over those of public administration (Thayer 1984). Downplayed as a result were the "traditional public personnel values of equity and procedural uniformity" (Ingraham and Ban 1984, p.2). Despite its passage in the fall of 1978, some of the most important provisions of the CSRA (such as, for example, creation of the SES) were not implemented until May of 1979. In retrospect, the timing of CSRA implementation turned out to be inopportune. With the election of the Regan administration (and its deregulatory policy agenda), formerly stable State institutions – those once autonomous from partisan political and economic influence – were now infused with instability. Market-defined performance criteria effectively politicized government managers, which, in conjunction with rapid yet uncoordinated deregulation, created the perfect conditions for unstable institutions and an increased perception of agency capture.

By politicizing the bureaucracy in order to bring about tighter political control over top managers (Clark 1978; Sundquist 1980; c.f. Huber and Shipan 2002), the Act had the unintended consequence of eroding long held confidence in the neutrality of administrators and agencies with respect to political and private economic interests. This erosion occurred along two lines. First, the politicization of managers effectively dissolved the bureaucracy's capacity to function as a commitment device for members of Congress (through procedural means). It was recognized shortly after the passage of the CSRA that this allowed "politics to overwhelm neutrality," and that "in the first year of

CSRA, problems began to emerge that demonstrated a rather dramatic tip toward politics at the clear expense of neutrality" (Ingraham and Colby 1982, p.306). Second, by making managers more alert to the political and economic implications of their decisions, the foundation upon which regulatory agency autonomy rested was undermined, opening the door to increased perception of capture.

A related instance of the new economic rules of the game was the transition in corporate legal structure that took place at the beginning of the 1980s. Richard Green writes that this transition shifted the risks of profit seeking from owners to shareholders, noting that

> A significant trigger point for rampant, irresponsible use of [collateralized financial] devices came in the early 1980s when Wall Street investment banks changed their governance structures from private partnerships, the dominant form to that point, to publicly traded corporations (Green 2012, p.114).

Firms once bound by stringent rules regarding risk (especially in finance), now found themselves able to socialize potential losses, while firms still bound by stringent rules could either demand deregulation of their niche of the economy or shift focus to more profitable sectors. Research by Green also describes the institutional and economic consequences engendered by the period of rapid deregulation in the late 1970s and early 1980s, particularly in the financial sector. Green notes that the new governance structure that emerged during this period "propelled momentous changes in institutional behavior because it dispersed liability for losses to shareholders, and freed management to pursue profits to the exclusion of sound governance" (Green 2014, p.30). These momentous changes emerged from the demand by capitalists for a relaxation of institutional rules and constraints on what was now deemed excessive limits on profit seeking, and the willing

supply of these new rules by legislators.

The political struggle that results from this supply and demand for new rules of the game (and concomitant institutional arbitrage), while often termed *deregulation*, is more aptly called *re-regulation* (Block and Somers 2014). Re-regulation should be kept conceptually distinct from mere *increases or decreases* in overall regulation. Piecemeal *re-regulation*, highly specific in each industry, makes use of targeted legislation (c.f. McCubbins et al. 1987). It shifts the incidence of regulation or its cost onto the commons or onto other capitalists. Naturally, intensified political conflict accompanies re-regulation because the burden of maintaining the commons shifts from one faction to the next, creating a race to the bottom in regulatory standards and intensity.

Downward harmonization in the intensity of regulation (see Davies and Vadlamannati 2013; Olney 2013) meant that different factions of capitalists no longer played by the same set of rules, depriving regulation of its credibility with respect to disciplining opportunistic behavior (Bowles and Wagman 1997; Ghai 1994). As regulation began to fragment, it caused the club to unravel as it was unable to sanction those capitalists who chose to engage in opportunistic defection. Once cost shifting and opportunistic defection became potential means of increasing profitability, free riding became emblematic of this new era.[25]

The payoff to re-regulation can only be short-lived, however. This can be seen in the schematic representation of Table 3.3. When effective, regulation keeps the interaction at the "both cooperate" payoff by making the "short-term windfall payoff" out of reach or unprofitable, essentially by imposing a toll on opportunism. Robust and

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[25] Tax avoidance and inversions, discussed below, are examples of this cost shifting.

Table 3.3. Payoff matrix for cooperation and opportunism

	Cooperate	Defect
Cooperate	Both Cooperate A⟩	Short-term windfall payoff
Defect	Short-term windfall payoff	B↓ Both Defect

credible regulation is represented by arrow "A." However, the ineffectiveness of regulation caused by re-regulation meant that it was no longer a credible deterrent. This also meant that opportunistic re-regulation became the "best" strategy because it secured, albeit temporarily, short-term windfall profits, or avoided others' realizing it at one's expense. As attempts were made to re-regulate in one's own favor, the belief that regulation was a sanction against overall opportunism eventually began to ring hollow, incentivizing further re-regulation. Thus, the increasing attraction of the profit opportunity associated with re-regulation will move the interaction to the "both defect" payoff along arrow "B." That is to say, the short-term windfall payoff cannot persist in subsequent rounds as opportunism abounds. Developed more rigorously below, the fundamental idea is that in the short-run re-regulation can be profitable, while in the long run it ends up making collective action much more problematic.

One concrete expression of the political struggle of re-regulation is downward harmonization in taxation.[26] Taxes, which are one form that investment in the club can take, were high during the golden age but politically unchallenged as long as they could not be skirted by those inside the club. For nearly half a century, from 1932 to 1980, the

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[26] Various measures of taxation can be found at the OECD (2015) website.

top federal marginal income tax rate in the United States averaged 81 percent (Piketty 2014). The tax revenue financed robust social expenditures beneficial both to capitalists and workers. Total U.S. government expenditures increased steadily as a percentage of GDP from around 20 percent in 1950 to a local peak of around 35 percent in 1982 (St. Louis Federal Reserve 2014).[27] In 2013, by contrast, the top federal marginal income tax rate stood at just under 40 percent for high earners (Tax Foundation 2015). Other measures of taxation show a similar tendency toward decline after 1980 (OECD 2015). For instance, taxes on corporate profits as a percentage of gross domestic product in the U.S. averaged 3.26 percent from 1965 to 1979, which declined to an average of 2.3 percent from 1980 to 2012. In addition, taxes on property (including inheritance and financial property) averaged 3.52 percent of GDP in the U.S. prior to 1980, and just 2.91 after.

Capital mobility, re-regulation, and downward harmonization in taxation are not unrelated phenomena. The undermining of regulatory and other borders around 1980 made taxes and the social welfare they supported increasingly irrelevant for corporate profit, as well as increasingly costly in relative terms for those still committed to cooperation. It was thus not surprising that taxes came to be viewed as a burden requiring deft accounting practices and political savvy; Marx foresaw such an interaction between capitalists as becoming "a question of strength and cunning" (Marx 1991, p.362). Take tax havens, for example, which consist of banking locations in countries with opaque rules with respect to financial reporting for tax collection purposes. Banking institutions in several worldwide locations saw nonresident deposits grow rapidly (as a percentage of gross world product) during the mid-1980s, and again after 2005.

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[27] Because of the recession of 2008, another local peak occurred which equaled that in 1982.

Unfortunately, proper data are not available prior to 1984 for many countries typically

considered tax havens. However, the numbers that are available for the growth in use of

tax havens after 1980 can be interpreted as a rise in the prevalence of opportunism. Data

for Switzerland, for instance, available since 1977, suggest that growth in deposits was

robust during the 1980s. Switzerland saw a 259 percent growth in nonresident deposits

as a percentage of world GDP from 1977 (fourth quarter) to 1987 (fourth quarter), while

other "island" tax havens saw a 227 percent growth over a comparable period of time

(1983 q4 to 1993 q4). Figures 3.1 and 3.2 display these trends through time. These data

are consistent with different measures of tax havens calculated by Dumenil and Levy

(2011, p.120). Tax evasion is one tangible illustration of the breakdown in capitalist class

unity represented in the schematic model (in Table 3.3). Tax evasion severed the ability

of the State to sanction further defection from the club, which in turn accentuated the

free-rider problem, further incentivizing opportunism (tax avoidance). The result of this

tax avoidance was mounting unmet collective costs as free riding intensified with each

capitalist struggling to reduce their share of the costs and tax burden.

For an analysis of the related phenomenon of tax *inversions*, which, not

coincidentally, first appeared in 1983, see Kelly (2004). Today, even the threat of a

corporate tax inversion brings forth calls by public officials for lowering the corporate tax

rate to zero (see Marples and Gravelle 2014).

The institutional arbitrage induced by re-regulation that began around 1980

eventually undermined the autonomy of the State itself. Clearly, once regulatory

institutions lose their relative autonomy from the very economic interests they are

supposed to regulate, they lose much of their ability to impose socially beneficial,
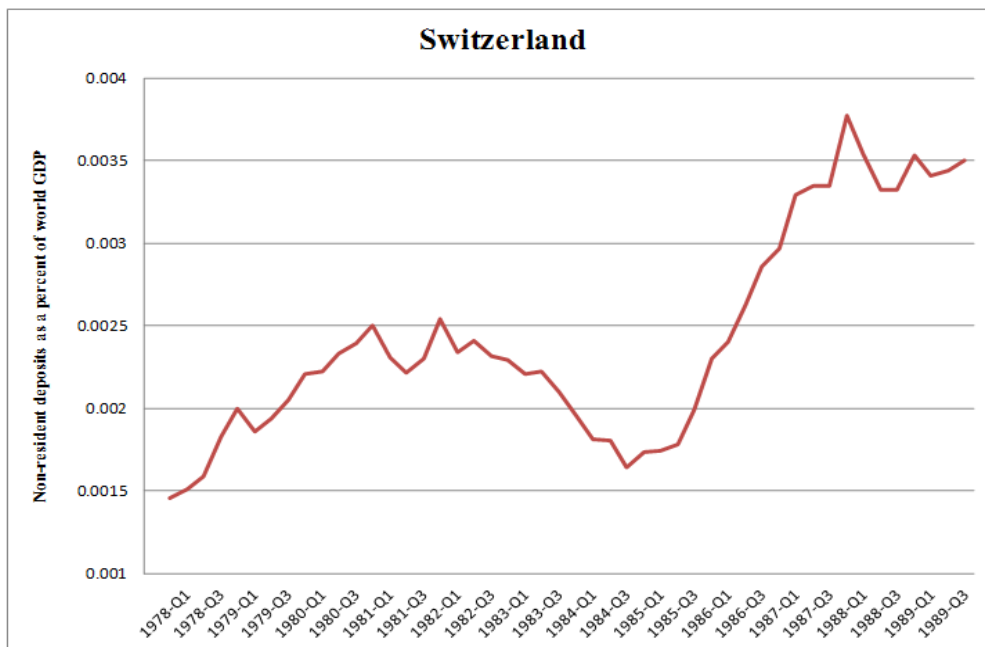
Figure 3.1. Rise of Tax Havens: Switzerland
Data source: Author calculation. BIS (2015) data for Switzerland. World GDP calculated using OECD (2015) data (all OECD countries for which data are available over the relevant period).
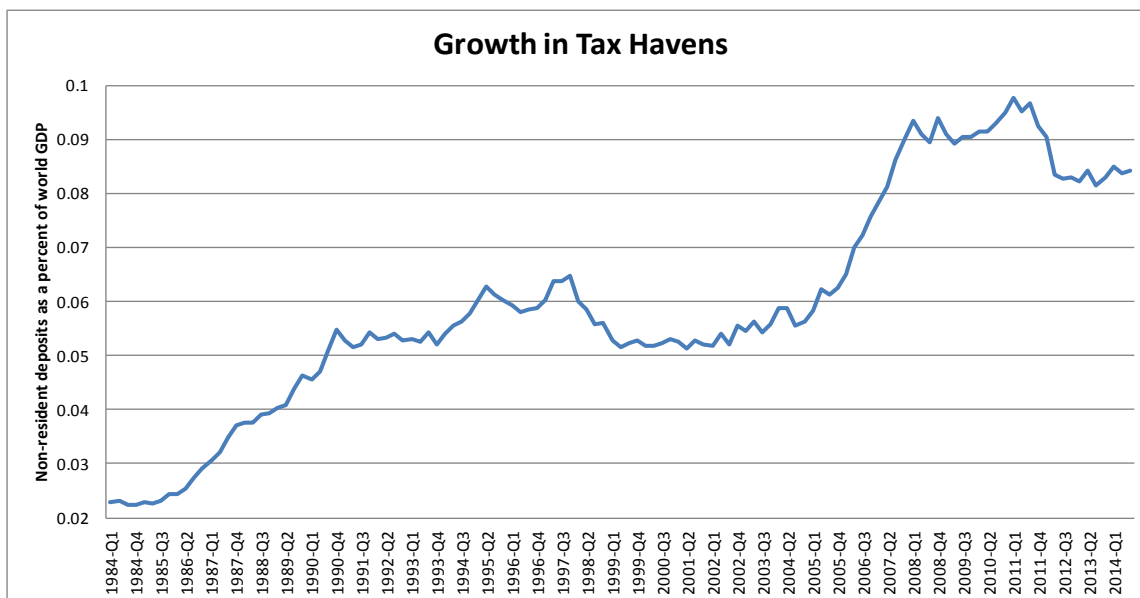

Figure 3.2. Rise of Tax Havens: Island Tax Havens
Data source: Author calculation. BIS (2015) data includes Cayman Islands, Singapore, Hong Kong, Bahamas, and Netherland Antilles. World GDP calculated using OECD (2015) data (all OECD countries for which data are available over the relevant period).

mutually binding restrictions on opportunism. This is why the State must be relatively autonomous from capitalists; the pursuit of enlightened self-interest requires that economic actors do not privately benefit by co-opting the regulation that was once intended to bring about collective gain. Ultimately, as the club solution to macroeconomic cooperation unraveled, collective action became a strictly dominated strategic choice.

3.4 Analytic Model

At an individual level the demand for re-regulation, although profitable in the short run for a select few, makes collective action more difficult. Precisely when it is working best, competition exacerbates this collective action problem by creating, in game-theoretic terms, an n-person prisoners' dilemma (Hardin 1982). Successful regulation – in which the State imposes uniform and mutually binding regulatory restrictions that jointly benefit most, if not all, in an economy – can diminish this collective action problem by increasing the payoff to cooperation relative to defection. The following model sheds light on exactly why regulation succeeds in engendering cooperation through an extension of the retaliation model found in Bowles (2006, p.241).[28]

Suppose there is a finite population of players, $N \in (1, \ldots, n)$, with n assumed to be even for $n > 2$. There is a random and anonymous (i.e., before the game) pairing of two players according to the matching function $m(\xi): N \rightarrow N$. Players use one of two strategies when they meet that are initially unknown to the other player, tit-for-tat or

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[28] The model is extended in the following ways. A more detailed preamble to the model better outlines the structure of the game; theta is incorporated as a tax on the payoff to defection; the manner by which the percentage of cooperators can be determined by theta is articulated; a calibration of the model is developed.

universal defect. Payoffs to these strategies are symmetric and are consistent with the usual prisoners' dilemma structure, $\sigma > \gamma > \chi > \omega$ such that $2\gamma > \sigma + \omega$. Sigma is the opportunism payoff, gamma the cooperate payoff, chi is the defect payoff, and omega the sucker's payoff.

It has been suggested in the foregoing that regulation is endogenous and based on class conflict. $\theta \in [0,1]$ is the intensity of this regulation, coming into play when one player using a cooperate strategy is paired with another using a defect strategy. The way regulation works is by decreasing the payoff to opportunistic behavior (the windfall payoff, σ) relative to the cooperate payoff (γ). Regulation intensity is strictly increasing and continuous on $[0,1]$. $\theta = 0$ represents strictly porous regulation (low intensity) that does not reduce the value of opportunism, while $\theta = 1$ is high regulation intensity that reduces to zero the current-round value of opportunism (complete or strict regulation with respect to σ). Incorporated in theta is the probability of detection of opportunism by the regulatory institutions. Rounds terminate with probability ρ, making the expected number of rounds $1/\rho$. This information can be organized as in the payoff matrix of Table 3.4.

Assume that fraction ξ of the population play a strategy of tit-for-tat (played by "Column" in the payoff matrix) and fraction $(1-\xi)$ of the population play a pure defect strategy (played by "Row" in the payoff matrix) over a short enough time horizon

Table 3.4. Symmetric Payoff Matrix (Payoff: Row, Column)

	Cooperate	Defect
Cooperate	γ/ρ, γ/ρ	$\omega+(1-\rho)\chi/\rho$, $\sigma(1-\theta)+(1-\rho)\chi/\rho$
Defect	$\sigma(1-\theta)+(1-\rho)\chi/\rho$, $\omega+(1-\rho)\chi/\rho$	χ/ρ, χ/ρ

to ignore the discounting of future payoffs.[29] Expected payoffs as a function of ξ for the

tit-for-tat strategy (π^T) and defect strategy (π^D) can be described by equations (11) and

(12).

$$\pi^T (\xi) = (\xi)\gamma/\rho + (1-\xi)[\omega+(1-\rho)\chi/\rho] \tag{11}$$

$$\pi^D (\xi) = (\xi)[\sigma(1-\theta)+(1-\rho)\chi/\rho] + (1-\xi)\chi/\rho \tag{12}$$

These expected payoffs are positive linear functions of ξ. By setting equations (11) and

(12) equal to one another and solving for ξ, the equilibrium fraction, ξ^*, of those playing

each strategy type (tit-for-tat or defect) can be determined. This equilibrium boundary

can be represented by equation (13).

$$\xi^* = \frac{(\chi - \omega)}{2\chi - \sigma - \omega + \dfrac{\gamma - \chi}{\rho} + \sigma\theta} \tag{13}$$

ξ^* is an internal equilibrium (i.e., an element of $[0,1]$) if ρ is less than $1/2$, and if the

denominator is positive. ξ^* is an unstable equilibrium, since small deviations above or

below equilibrium do not reconverge. This can be seen clearly in Figure 3.3. To see why

it is unstable, notice that to the right of ξ^*, the cooperate payoff relative to the defect

payoff is increasing. This leads over time to a rising fraction of the population seeking to

cooperate, meaning more and more players using tit-for-tat strategies will meet. To the

left of ξ^*, the defect payoff relative to the cooperate payoff is increasing. This leads over

time to a decreasing fraction of the population willing to cooperate as more and more

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[29] More precisely, this discount rate is incorporated in ρ.
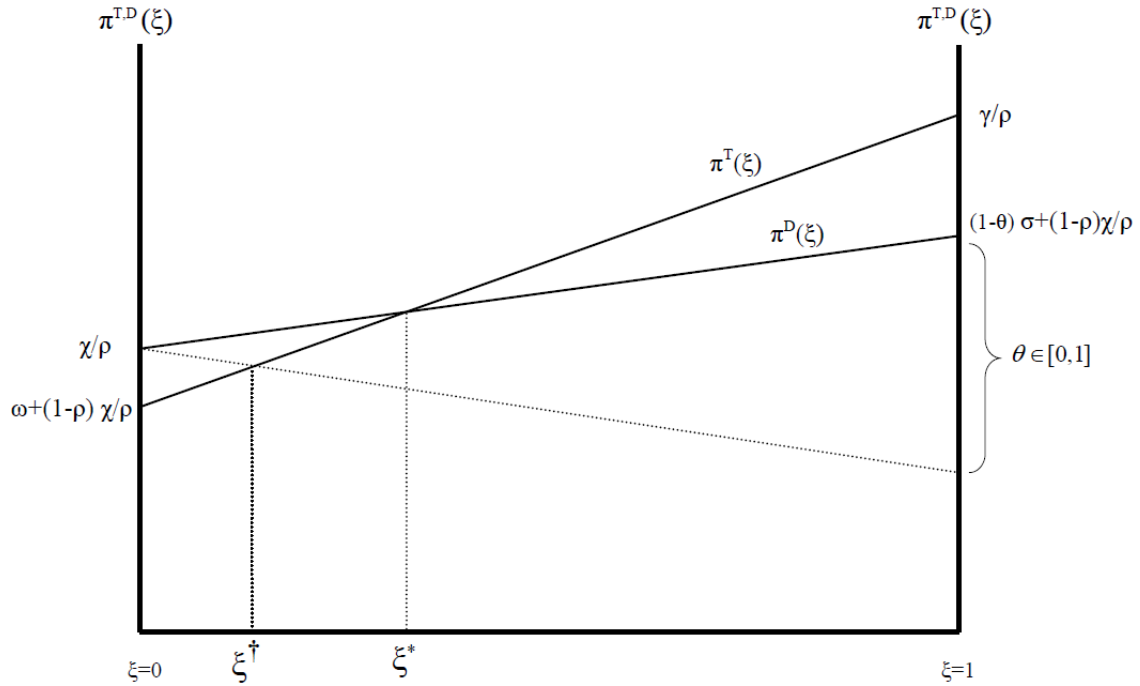
Figure 3.3. Incremental effect of regulation θ on the equilibrium boundary ξ.

players using defect strategies meet. Because ξ* is an unstable equilibrium, it represents the *boundary* for the respective basins of attraction for stable equilibria ξ=0 (no cooperators) and ξ=1 (all cooperators). The partial derivative of equation (13) withrespect to theta shows the impact of regulation on this boundary. The marginal effect of increased regulation intensity θ on the boundary between strategies can be seen in equation (14).

$$\frac{\partial \xi^*}{\partial \theta} = \frac{-\sigma(\chi - \omega)}{(2\chi - \sigma - \omega + \frac{\gamma - \chi}{\rho} + \sigma\theta)^2} < 0 \tag{14}$$

Equation (14) indicates that an increase in regulation intensity (θ) shifts the unstable

equilibrium to the left, decreasing the basin of attraction for the defect strategy (i.e., the

space to the left of ξ^*) while increasing the basin of attraction for the tit-for-tat strategy

(i.e., the space to the right of ξ^*). Regulation intensity of 0 through 1 is shown on the

right-hand vertical axis of Figure 3.3. To the right of ξ^* on the horizontal axis is the

percentage of the population playing tit-for-tat strategy because its relative payoff is

higher. To the left of ξ^* is the percentage of players using the universal defect strategy

because its relative payoff is higher. When regulation intensity has no effect on

opportunism ($\theta=0$), payoffs are indicated by the upward sloping solid lines. Holding

constant the expected payoff to the tit-for-tat strategy ($\pi^T(\xi)$) – because regulation does

not influence its expected payoff – an increase in regulation intensity from 0 to 1 rotates

downward the expected payoff for defection ($\pi^D(\xi)$), shifting the boundary leftward from

ξ^* eventually to $\xi^\dagger$. An increase in theta means that the expected cost of future retaliation

for a defector increases, shown through a rotation downward of its expected payoff

function, shifting the unstable equilibrium to the left. The ultimate effect is an increase in

the probability of game-wide cooperation because of a rise in the likelihood of meeting

another player who plays strategy tit-for-tat.

3.5 Calibration

Values of ξ can be calibrated by assuming plausible values for the payoffs to

satisfy the necessary prisoners' dilemma inequalities. Suppose there is a 25 percent

chance rounds are terminated ($\rho=.25$), and that the vector ($\sigma > \gamma > \chi > \omega$) = (8 $>$ 6$>$ 4 $>$ 2)

describes the respective payoffs.[30] Given these assumed values, expected payoffs to each

strategy type are listed on the vertical axes of Figure 3.4. As regulation intensity

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[30] Notice that these assumed payoffs also satisfy the inequality 2 (6) > (8) + (2).
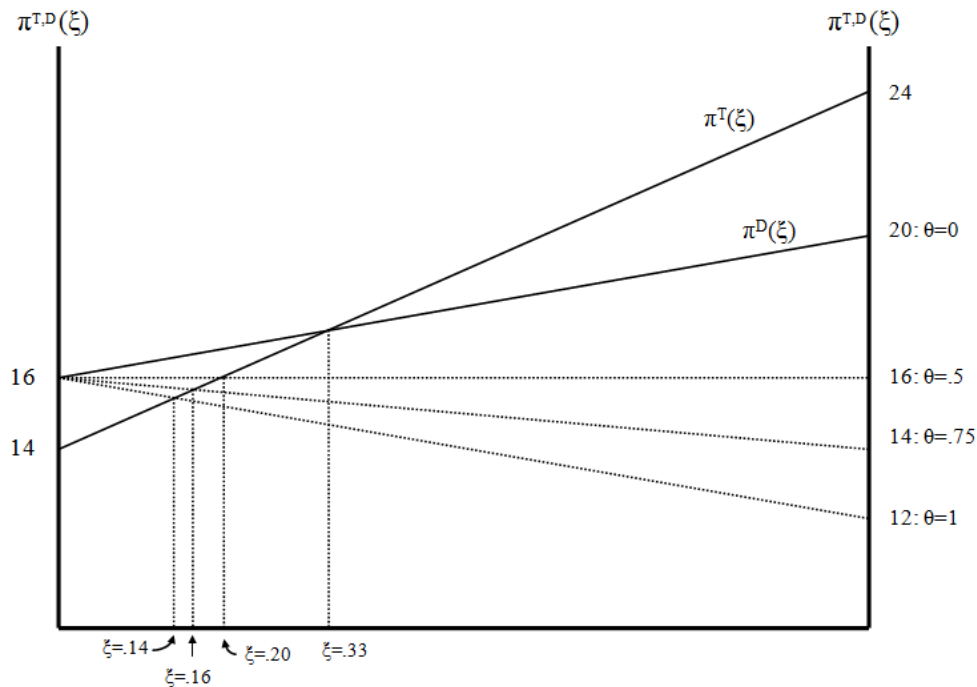
Figure 3.4. Predicted values of the cooperation boundary ξ with assumed payoff values.

increases, the expected value of defection falls, which increases the space to the right of

ξ*. A value of θ = .5 means that regulation intensity reduces the value of opportunism by

50 percent, which leads to an expected value for the defect payoff equal to the mutual

defect payoff at 16. At θ = .5, roughly 80 percent of the population will be willing to

cooperate, while 20 percent will chose the defect strategy. At θ = .75, the expected value

of the opportunism payoff falls to a level equivalent with the sucker's payoff at 14. When

θ = 1, the expected value of the opportunism payoff falls below the sucker's payoff to a

value of 12. At this intensity of regulation, the level of cooperators will be approximately

86 percent and the level of defectors will comprise approximately 14 percent of the game

population.

Keeping with these assumed values, Figure 3.5 displays the incremental effect of

regulation intensity on the cooperation boundary. The percentage of cooperators is
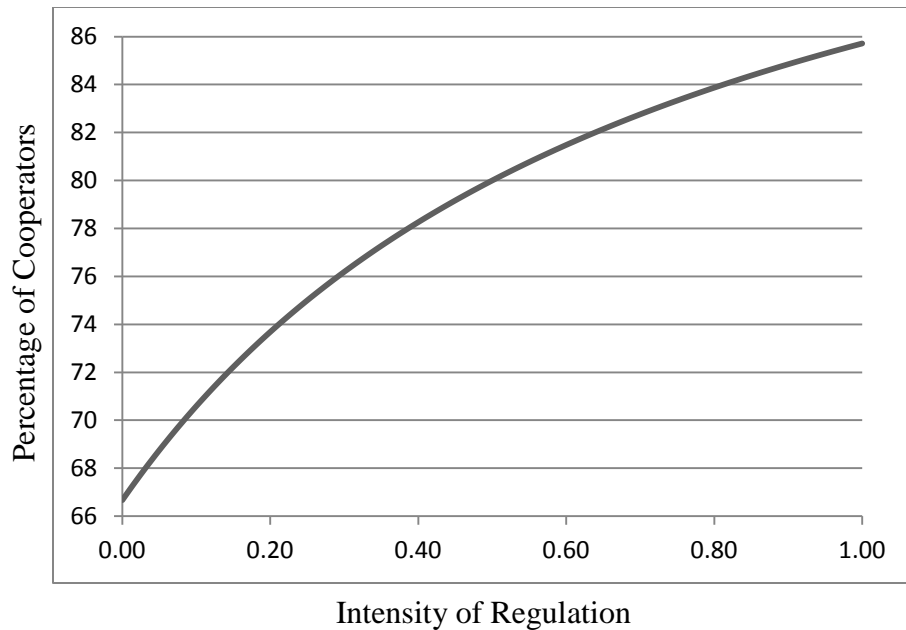
Figure 3.5. Effect of regulation on the percentage of cooperators.

strictly increasing in regulation intensity, as shown with the assumed values. Notice that

involves informal as well as formal institutions. In this model regulation serves as a

commitment device, its intensity determining the penalty for deviating from cooperation.

The model suggests that through increasing the intensity of regulation the State has the

potential to increase the number of cooperators by increasing the expected cost for a

defector. Yet this only occurs when the State's regulatory apparatus is autonomous

enough to shore-up effectively any regulatory boundaries that are porous. As the

percentage of cooperators increases, so too does the probability of reaching the stable

equilibrium where everyone cooperates as opposed to reaching the stable equilibrium

where no one cooperates. $\xi^{\dagger}$ can thus be interpreted as the cooperation boundary

engendered by regulation during the golden age. By contrast, a decrease in the intensity

of regulation makes more numerous those playing the defect strategy by increasing its

relative payoff, which decreases the fraction of "willing cooperators." The re-regulation

that occurred around 1980 can be described analytically as a weakening of its intensity. With regulation made porous, the cooperation boundary shifted to the right, increasing the percentage of players using the defect strategy as its relative payoff increased.

Predictions of the model indicate that re-regulation will be profitable in the short run by increasing the return to opportunism (σ) for a select few, but detrimental to collective action in the long run by eroding confidence in the cooperation of others, which can thus dissolve quickly once regulatory boundaries become porous. This prediction is consistent with the evidence provided on the rapid rise of tax havens during the 1980s.

CHAPTER 4

LITERATURE ON REGULATION AND STATE CAPTURE

Lobbying expenditures in the United States have been on the rise since the late 1970s (Kaiser 2010), which is not surprising given its rapidly increasing rate of return (Alexander et al. 2009; Weissman and Donohue 2009). The adverse side effects of the malleable and impartial regulation excessive lobbying gives rise to have only lately begun to surface. These include systemic risk in financial markets (Igan et al. 2011) and perverse incentives (Skaife et al. 2013).

Yet a solution to these costs today remains absent. This is because the literature on economic regulation, while correctly identifying these costs, has remained theoretically fragmented, making policy recommendations at best incomplete. This chapter bridges the theoretical discussion with the empirical findings reported in Chapter 5 by providing a critical review of this literature. It contrasts the literature on regulation that characterizes the dysfunction of State institutions as a problem of too much government with that which suggests the problem stems from a failure of markets as well as institutions.

4.1 Regulation

The central idea behind economic regulation is to bridge the gap between private profit and public welfare. This concept was uncontroversial to an enlightened representative of the capitalist class during the golden age (see, for example, CED 1971, p.28-29). Successful economic regulation of markets can take many different forms. The earliest work on regulation was done by Arthur Pigou (1924), who argued that taxation should be used to equalize the marginal benefit of a private endeavor with its marginal social cost. Coase (1960) approached the problem from a different perspective, arguing that if the costs of transacting (or bargaining) are zero, tax or regulatory interventions are unnecessary as individuals will converge on the price or set of contracts that correct a market externality. Yet to Coase, an economy consisting of zero transaction costs is uncommon. He therefore also understood the important role government might play when transaction costs are positive. Coase writes

> Of course it does not imply, when transaction costs are positive, that government actions (such as government operation, regulation, or taxation, including subsidies) could not produce a better result than relying on negotiations between individuals in the market. Whether this would be so could be discovered not by studying imaginary governments but what real governments actually do. My conclusion: let us study the world of positive transaction costs (Coase 1992, p.717).

Douglass North built on Coase's notion of positive transaction costs in his influential research on the State and institutions (North 1981; 1990). Institutions, suggested North, "are the humanly devised constraints that shape human interaction" (North 1990, p.3). His research argued that institutions provide markets with the "rules of the game" for competition and cooperation, aligning private interests with social welfare through the use of incentives, rules, and sanctions. These institutions can be public-order

– as in governmental or financial institutions – or they can be private-order – as in networks, customs, or routines. According to North, institutions are the referees of markets that make the rules of the game uniform and binding to all players.[31] In a modern capitalist economy, public-order institutions are the main third-party mechanism for lowering the transaction costs of organizing collective economic activity in markets. An intriguing question is whether this third-party is neutral with respect to the participants. Will participants always trust that governmental institutions will act impartially, or will they attempt to steer these institutions in self-serving ways? Clearly, it is essential that the correct mix of *neutral* enforcement, formal regulation, and informal constraints become important components of all public-order institutions (c.f. North 1990, p.58).

It has been suggested that economic regulation can take two basic forms as to whether it is narrow or broad (Dal Bo 2006). The narrow view is limited to the government regulation of natural monopolies in which balancing public and private interests means permitting economies of scale in production while regulating output prices and limiting negative externalities such as environmental pollution. The broad view of economic regulation encompasses any type of government intervention in the economy – in transportation, manufacturing, finance, or other industries – to provide the "rules of the game" (i.e., boundaries) for product and factor markets.

It is the regulatory institutions in this second, broader sense that become dysfunctional if private interests co-opt economic regulation at the expense of public welfare. This is what the literature describes as *regulatory capture*, but is more accurately labeled opportunistic *re-regulation*, symptomatic of a breakdown in the unity of the capitalist class. Carpenter and Moss (2013) define regulatory capture as "the result or

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[31] This argument was also made by Karl Polanyi (1947, 2001), and more recently by Scott (2011, 2012).

process by which regulation, in law or application, is consistently or repeatedly directed away from the public interest and toward the interests of the regulated industry, by the intent and action of the industry itself" (p.13).

It is within this literature that economists address some of the more concrete topics resulting from dysfunctional institutions such as systemic risk in the financial system and welfare loss in the case of monopoly. Two prominent studies of regulatory capture in the literature include Stigler's (1971) research on the trucking industry in the 1930s and Huntington's (1952) study of the Interstate Commerce Commission and its regulation of railroads. In both instances, the regulatory apparatus had become captured and incapable of regulating their target industry in support of the public interest. There have been several critiques of Stigler's econometric approach (see Carpenter and Moss 2013), but the intuitive idea behind it has been influential among economists, ultimately laying the foundation for the way many economists think about capture today.

The literature on regulatory capture can be separated into two strands of thought. For the *Chicago school,* the problem of capture stems from an equilibrium between the supply and demand for regulation and political tradeoffs (Stigler 1971; Peltzman 1976; Laffont and Tirole 1991). Basing regulation on supply and demand rather than on social (collective) costs, political intervention in the economy is described by the Chicago school as *inefficient* because resources could potentially be reallocated for economic gain. For the *Virginia school,* on the other hand, regulation of the economy itself stimulates rent seeking as capitalists search for opportunities to out-bid one another for favorable regulation (Buchanan and Tullock 1962; Tullock 1967; Krueger 1974). This makes political intervention in the market *wasteful* of economic resources. Two recent and

salient categories of regulatory capture and rent seeking in the United States can help illustrate the divergence between private profit and public welfare (i.e., the failure of regulation).

The first category deals with the formation of trade policy in the United States.[32] Hoffman (2005) developed a general model of the formation of trade policy in which industry protection results from the *ability* of the government and firms (or interest groups) to solve a commitment problem. The baseline of Hoffman's model is free trade, which can be thought of as arising because of the difficulty the government faces in committing to a particular vector of trade policy in conjunction with the difficulty a capitalist faces in committing to a schedule of campaign contributions. This free-trade equilibrium revolves around the time-inconsistent nature of *setting* the trade policy versus *receiving* the campaign contributions. The external effect of this commitment problem is actually positive for society, suggests Hoffman, writing, "[t]he difficulty the government and interest groups have in committing to actions is bad for them, but good for society" (Hoffman 2005, p.186). However, a substantially different conclusion follows when the interaction is conceptualized as a game between two capitalists (or factions thereof). When analyzed in this way, capitalists will *maximize* instead of *minimize* the amount spent on lobbying because they expect others to do so as well. They essentially become locked in a very similar commitment problem, only now, it is the *inability* to solve it that is costly. Indeed, the least-costly course of action for individual capitalists – in which they maximize lobbying expenditures because others will as well – now becomes bad for them *and* for the society. Thus, in contrast to Hoffman's model, competition in conjunction with a commitment problem creates a *negative* externality. Clearly, in this

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[32] See Rodrik (1995) for a complete analysis of political economy of trade policy models.

case, it is the task of impartial regulation to make profit invariant to the lobbying expenditures of capitalists.

The broader literature on rent seeking is simply a more general version of Hoffman's depiction of trade policy. The literature suggests that regulation of trade is ineffective at bridging the gap between private profits and public welfare because it creates rents and the attempt to capture them involves a wasteful use of resources (Posner 1975). Within this literature, why is regulation is so ineffective? Tullock (1967) argued that standard estimates of the welfare costs of tariffs are often underestimated because they fail to account for the resources spent in rent seeking, and that tariffs will stimulate additional welfare loss when firms attempt to divert income using the *impartial* political process. Known as the "Tullock" version of the all-pay auction (Wenders 1987; Ellingsen 1991; Baye et al. 1996), rent-seeking firms will bid-up the resources spent in the lobbying process – occasionally in excess of the actual expected rent received – because they know others will too. Krueger (1974) also made connections between the rent-seeking literature and trade policy, writing, "competitive rent seeking for import licenses entails a welfare cost in addition to the welfare cost that would be incurred if the same level of imports were achieved through tariffs" (Krueger 1974, p.295).[33] In the context of impartial regulatory institutions, some economic actors will gain merely by exercising political power. It is therefore not surprising that this literature concludes there is too much government regulation of the economy.

Trade policy formation can also be thought of as an interaction between the supplier of a vector of trade policy (i.e., government) and those who demand such

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[33] Krueger's thesis has found empirical support recently in the case of imported tuna into the United States; see Okun et al. (2011, p.2-28).

protection (i.e., capitalists). The two most well known among this class of models are the "protection for sale" model (Grossman and Helpman 1994; Grossman and Helpman 1996) and the "black-hole tariffs" model (Magee et al. 1989).[34] In the protection for sale model, an incumbent politician maximizes a welfare function over political campaign contributions – that is, the private interests of both the politician and those contributing – and over voter welfare and the public interest. These campaign contributions generate protective tariffs, nontariff barriers, and other artificial means to inflate capitalist profits while imposing negative external costs on the commons – a classic form of regulatory capture.[35]

In an empirical assessment of the protection for sale model, Eicher and Osang conclude that "[t]he broad picture that emerges about the U.S. pattern of protection is that it is influenced by lobbying spending and lobbying competition, and that, hence, protection is 'sold'" (Eicher and Osang 2002, p. 150). The protection for sale model has seen several other empirical tests in the literature (Goldberg and Maggi 1999; Gawande and Bandyopadhyay 2000), which also support its theoretical predictions. Baldwin and Magee (2000) find indirect empirical support of the model (and also of the gap between private profit and social welfare) by examining voting on congressional trade bills, specifically votes over adoption of the North American Free Trade Agreement (NAFTA) in 1994. The authors find evidence that organized labor's political contributions lead to votes against freer trade while the political contributions of organized business lead to votes in favor of freer trade, controlling for factors such as district characteristics and economic conditions. Their analysis suggests that capture and rent seeking occur not only

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[34] The former posits incumbent politicians while the latter posits competing interest groups.
[35] More precisely, *legislative* capture.

within regulatory institutions themselves (see Peltzman (1976) and Laffont and Tirole (1991) who extend Stigler's (1971) original insight), but also at the level of the legislative and administrative apparatus of the State (McCubbins, Noll, and Weingast 1987; Hall and Wayman 1990; Huber and Shipan 2002). In addition to generating negative collective economic costs, lobbying the political process is also highly inefficient.

A second set of examples involves the sphere of domestic finance, which highlights again the divergence between private profit and social welfare. Igan, Mishra, and Tressel (2011) find that one class of lobbying targeted the relaxation of rules in order to allow increased risk-taking (contributing to systemic collective cost) in the mortgage lending industry, specifically in the period prior to the 2008 crisis. The research presents a connection between politically active financial players and systemic risk that makes financial crises and resulting bailouts more likely. This socialization of risk – a classic collective action problem – is highly profitable to financial firms and their top executives personally, as research by Skaife, Veenman, and Werner (2013) demonstrates. This latter research finds that a firms lobbying intensity increases CEO compensation (i.e., private gain), while leaving shareholder value (i.e., social welfare) unaffected. The authors conclude that shareholders shoulder the costs of lobbying, resulting in privatized gains and distributed losses. This incentivizes other types of lobbying, institutionalizing it as a means to maintaining a competitive edge. Instead of stabilizing the economy, financial intermediation in conjunction with dysfunctional institutions can promote steep collective and systemic costs. Once socialized risk become an essential part of profit making, private agents are locked in a socially suboptimal Nash equilibrium, requiring an external commitment device – i.e., the regulation administered by the Federal Reserve or U.S.

Treasury – in order to coordinate successful collective action with respect to these systemic economic costs. However, once lobbying is institutionalized, the regulation administered is likely to be highly contested. Richard Green has suggested that the recent "Dodd-Frank" financial legislation can be beneficial for large firms seeking to reduce risk, but its ongoing robustness remains uncertain. Indeed, the solutions detailed by experts to "once again make the financial system safe, simple, and boring (Green 2014, p.38)" remain today highly contested by those with political power who have profits at stake.

One reason for the contested nature of regulatory policy is because much of the literature in economics has perceived the re-regulatory trend occurring after 1980 as a problem associated with too much government (Feldstein 1980; Olson 1982; Ferguson 2013, Schuck 2014) in contrast to a failure of markets and institutions (i.e., the ineffectiveness of the commitment device). If the State and its regulatory apparatus are not impartial with respect to private interests, political intervention in the economy can be described as inefficient at best and a waste at worst (Przeworski 1990, p.23). It is thus not too surprising that the increased opportunistic re-regulation of markets occurring after 1980 (Block and Somers 2014; Dumenil and Levy 2011) was perceived as a capture of a government grown too large and complex (for an example of this view, see especially Olson 1982 or Ferguson 2013). When regulation is malleable and thus partial, any increase in regulation's scope or intensity can cause economic actors to attempt to shift their regulatory burden onto the commons or onto others. When some gain and others lose, it is the shifting of regulatory burden that is viewed as a capture of the regulatory apparatus itself. By contrast, when regulatory boundaries are robust and credible, they

can hold individuals to their enlightened self-interest in the face of intense economic competition.

4.2 State Capture

The wedge between private and public interests due to porous regulation and agency capture can best be seen, however, in developing and transition economies. Transition economies or economies with substantial State capture face two basic issues that restrict economic growth, one market-related and the other institutional. First, the political organization of the State is often so weak as to be easily captured; this represents the institutional failure. A lack of effective political organization means that regulatory institutions are not neutral and therefore do not have sufficient coercive force to provide impartial "rules of the game" for markets. This exacerbates the second basic issue, in which attempts to privatize State-owned enterprises have the unintended consequences of shifting economic organization from public-order to corrupt private-order (i.e., mafia) institutions, as was the case in the former U.S.S.R. in the 1990s. Collective contributions to basic public goods plummet, leading to still weaker political organization.

The recent literature on State capture provides clear evidence supporting this observation. Economic opportunism in these countries is incentivized through a weak political and regulatory apparatus in which public officials are captured by private interests and unable to act in the public interest. According to a recent empirical study, "private gains to capture are associated with *substantial social costs* in capture economies both in terms of overall economic performance *and with regard to the capacity or commitment of the state to provide critical public goods for the development of the*

market economy" (Hellman et al. 2003, p.770, italics added). The authors suggest that

capture shifts the cost of investment in public goods from large firms to smaller firms and

to the broader public. This cost shifting represents a negative externality in itself, but it

also creates additional negative externalities by incentivizing all around political and

economic opportunism. In a related empirical study, Slinko et al. (2002) find evidence

that, among other costs, one of the foremost negative externalities imposed by cost

shifting is decreased social spending on public goods – a salient example of the

divergence between private and public interests. When contrasted with the descriptive

evidence found in the CED report of 1971, the Chicago and the Virginia view of

regulation remain incomplete. The State capture literature, on the other hand,

emphasizing a failure of markets as well as institutions, is more consistent with the

report's conclusions.

One final example to be explored concerns regulation of the conditions of labor

and employment in an economy. The CED report devoted considerable space detailing

the potential efforts the business community could undertake "to improve [the way] the

over-all American system is working so that a better quality of life can be achieved for

the entire citizenry" (CED 1971, p.13). The efforts its authors listed directly affect work

and labor, which the report framed as a series of *collective goods* continually subject to

over-extraction. Listed in bullet points in the original report, these collective goods

included,

> elimination of poverty and provision of good health care; equal
> opportunity for each person to realize his or her full potential regardless of
> race, sex, or creed; education and training for a fully productive and
> rewarding participation in modern society; ample jobs and career
> opportunities in all parts of society; livable communities with decent
> housing, safe streets, a clean and pleasant environment, efficient

transportation, good cultural and educational opportunities, and a
prevailing mood of civility among people (CED 1971, p.13).

Why did the authors of the CED report view labor as a common resource, and why is

impartial regulation of this resource important to the capitalist class?

In the "tragedy of the commons," Hardin (1968) suggested that if there is a

resource that must replenish itself, competition will often lead to its overuse and ultimate

deterioration. A related element of the tragedy for Hardin is the inefficient use of time

and energy in the pursuit of using/extracting this resource faster or more extensively than

others, an issue described by a "Tullock auction" (e.g., Tullock 1967). An important

contribution made by Marx to the economics literature was to shift the focus toward

abstract labor power as the source of value in production.[36] The *productive capacity*

embodied in labor power is a collective good, analogous to the productive capacity of a

natural resource. In contrast to a natural resource, however, it is the education and

physical health of labor power that contribute to economic productivity, which must find

support and protection from over-extraction. The ability to husband this resource is in the

enlightened self-interest of individual capitalists because its opportunistic overuse

imposes a collective cost on all capitalists. Marx's observation that there must be

"equality of restraint on the exploitation of labour (Marx 1992, p.621)" runs parallel to

those same observations made in the CED report of 1971.

Of course, without property rights over labor power or regulation of its

opportunistic overuse, the incentive for the individual capitalist is to externalize these

costs to the commons. Hardin's proposed solution to the tragedy was in establishing

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[36] Although many classical economists utilized the labor theory of value in their economic models, they lacked an invariant measure of value. Marx brought in the concept of socially average labor time as this invariant measure, as well as a sharper distinction between the use-value and the exchange-value of labor power.

"mutual coercion mutually agreed upon" (Hardin 1968) with clearly articulated property rights. From the perspective of the capitalist class, however, property rights over *labor power* are an inefficient solution (because of the misalignment of interests between owner and slave), and socialism is not a viable alternative as it threatens capitalists' collective ownership of the means of production. This basic tension underlies today's market/institutional failure. An over-reliance on the market mechanism without an impartial third-party to regulate competition and to support enlightened self-interest means that few will voluntarily contribute to social goods and share collective costs.

Concretely, this becomes a question of how the capitalist class prevents some of its members from imposing costs on the rest through the degradation of labor power to enhance profit. The solution detailed by Marx was economic legislation and regulation – determined endogenously by class conflict – and from there a transition to a new mode of production. Yet, the answer to this question may also hinge on the autonomy of the regulatory apparatus from capitalists themselves. This characteristic is explored from an empirical perspective for the United States in the following chapter.

CHAPTER 5

MEASURING THE RELATIVE AUTONOMY OF THE STATE

The core theoretical concept of the relative autonomy of the State is explored

from an empirical perspective in this chapter. The foregoing discussion suggested that

regulation of market behavior during the golden age was effective in engendering a

unified capitalist class in part because regulation was robust and credible – a commitment

device for capitalists such that each shared equally the cost of investment in the social

commons.

Descriptive evidence for this view was found in the CED report of 1971, which

indicated that impartial regulation was beneficial to capitalists because it allowed them to

act in their enlightened self-interest and refrain from narrow opportunism, among other

benefits. Even though regulation might have meant lower individual profitability, it was

collectively beneficial because of the social investment in productivity it engendered. The

way regulation supported collective action was outlined analytically by defining the

State's regulatory apparatus as a commitment device, capable of imposing mutually

beneficial restrictions on the capitalist class.

This commitment device was effective during the golden age because the State

was relatively autonomous from the capitalist class, resistant to efforts of different

factions to gain influence at others' expense, which is an empirical hypothesis this

chapter explores. This autonomy ensured that the rules embodied in regulation would be enforced, and the threat of sanctioning those inclined to act opportunistically was credible. The commitment device increasingly lost its effectiveness after 1980 during the neoliberal era as the payoff to acting in one's enlightened self-interest was overshadowed by the increased pursuit of narrow individual opportunism. The unity of the capitalist class began to diminish as the State's autonomy was undermined, and regulation ceased to be an effective commitment device. The result was increased *re-regulation* (described earlier as hijacking the rules), which, over a short period in the early 1980s became institutionalized as the preferred means to increase low individual profitability. That in turn engendered opportunities for some capitalists to obtain short-term economic rents by migrating away from regulation or simply skirting the rules altogether. The analytic model predicted that re-regulation is profitable in the short run but not in the long run. This is because, as Ostrom (2000) suggested, when some are able to evade rules, others will become unwilling to cooperate. No longer focused on cooperation, their focus will instead be on trying to bend rules in their favor and free ride on the cooperation (social investment) of others, which will thereby turn the structure of interaction among capitalists into an n-person prisoners' dilemma (Hardin 1982) and further compromise the relative autonomy of the State over time.

The empirical hypothesis to be explored can be specified compactly as follows. Prior to 1980 there is no statistically significant relationship between the profit rate and the State (i.e., the State is relatively autonomous), while after 1980 there is a negative relationship (i.e., the State is not relatively autonomous). The basic intuition is that cooperation (and the broad social prosperity that follows) is much more likely to occur

when everyone follows the rules, or when individuals are punished swiftly for opportunism (the case prior to 1980). Cooperation is less likely when the rules can be bent in one's own favor to gain private advantage (the case after 1980).

This chapter reports empirical findings that are consistent with this hypothesis. During the "golden age" of capitalism – or for the purposes of this empirical analysis, the period from 1948 to 1980 – the State was effective in aligning private return with social welfare because the State's relative autonomy was intact. This is in contrast to the neoliberal era after 1980, which is characterized by the undermining of the State's relative autonomy. In what follows, the two empirical models that are used to operationalize this main hypothesis are discussed first, and then the estimation techniques and data used are described prior to reporting the test results obtained.

The first model is based on the simple idea that if the State and its regulatory apparatus are relatively autonomous and thus resistant to narrow opportunism, industry rates of profit will be invariant to a change in who controls the Executive branch of government (and thus a change in the rules of the game), controlling for other variables. This idea is grounded in literature that suggests that economic profits have the potential to be shaped in large measure by the political party controlling the Executive branch of government that is responsible for the *administration and application* of rules and procedures (McCubbins, Noll, and Weingast 1987; Huber and Shipan 2002; Cohen, Diether, and Malloy 2012). Put simply, if the State is autonomous, a change in the application of rules should have no appreciable influence on profit rates at the industry-level. By contrast, if the State is not autonomous, a change in the rules will benefit some industries over others, making other capitalists less willing to contribute to social

(collective) goods and to share social (collective) costs.

While the empirical estimates are consistent with the hypothesis tested, a number of methodological objections with the data can be raised and are discussed below. The second model specification addresses these methodological concerns while at the same time making it possible to distinguish the short and long run interaction between the profit rate and *regulation intensity* – one tangible example of the State apparatus.

5.1 Data

The relationship between the regulatory apparatus of the State and industry level profitability in the United States is examined using data spanning a sixty-four year period from 1948 to 2012. Data from eleven two-digit NAICS industrial sectors are used to calculate rates of profit, which are regressed against changes in the Executive and Legislative branches of the United States government. Yearly data from *Congressional Quarterly Inc.* (2013) were collected for the percentage of Democrats in the Senate. Data were also collected from the *Bureau of Economic Analysis* (2014)[37] (BEA henceforth) to calculate the before-tax profit rate for each of the following eleven industries: agriculture, mining, transportation, utilities, wholesale trade, retail trade, construction, durable goods, nondurable goods, services, and finance-insurance-real estate (FIRE). The formula for the rate of profit in each industry is

$$\textit{Profit rate} = \frac{\textit{Corporate profits + Nonfarm proprietors' income + Net interest}}{\textit{Capital stock}}$$

(15)

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[37] NIPA, section 6. National Fixed Assets section 3, current cost net stock of private fixed assets.

which are measured at current (replacement) cost in industry i in year t.[38] Equation (15)

indicates that the rate of profit is a function of corporate profits, nonfarm proprietors'

income, and net interest, each divided by the stock of capital in that industry. In the

calculated capital stock for the FIRE industry, the stock of private residential household

fixed assets (found in BEA Table 5.1) was subtracted from the FIRE current-cost net

stock of private fixed assets. For all industries, the capital stock measure is the current-

cost (in contrast to historical cost) net stock of private fixed assets obtained from *BEA*

Table 3.1ESI. The average profit rate is a summation of the elements in equation (15),

which controls for different sized industries by allowing the separate components to enter

the profit rate calculation directly as opposed to assuming all industries are equal in size

and taking the simple average of the final rates of profit. Table 5.1 displays descriptive

statistics for the variables, while Appendix B displays the industry profit rates through

time. Industry rates of profit differ widely both in terms of magnitude and variance.

Table 5.1. Descriptive Statistics

Variable/Profit Rate	Obs	Mean	Std. Dev.	Min	Max
Sen Dems	65	54.02	6.89	44.00	68.00
Agriculture	65	5.71	1.56	3.13	8.48
Mining	65	3.92	2.24	-1.28	10.19
Construction	65	70.06	14.36	44.14	107.74
Durable Goods	65	17.81	10.86	1.85	48.95
Nondurable Goods	65	21.16	6.13	11.22	37.72
Transportation	65	4.05	1.87	1.87	9.81
Utilities	65	5.29	1.09	1.60	6.97
Wholesale Trade	65	53.19	32.03	19.85	137.41
Retail Trade	65	35.89	16.95	13.64	78.27
FIRE	65	21.12	3.67	10.88	27.23
Services	65	18.72	1.97	14.68	21.91
Aggregate	64	18.47	2.23	12.32	23.59
Average	65	16.27	1.61	12.96	19.74

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[38] Basu (2013) suggests current cost and historical cost measures converge in the long run.

Agriculture, mining, transportation, and utilities have the lowest average profit rate along

with a substantial amount of variability over time. This is particularly true for mining.

Construction, wholesale, and retail trade have the highest average profit rate, with a

general tendency toward decline in the trade industries. The same is true for the

manufacturing industries – durable goods and nondurable goods –, which have a mid-

range average profit rate. The rate of profit for services is relatively flat over time and has

an average of close to 20 percent. The finance, insurance, and real estate (FIRE) industry

has an average profit rate of about 21 percent during the sample with substantial variation

over time. Figure 5.1 displays two measures of the rate of profit, as well as the percentage
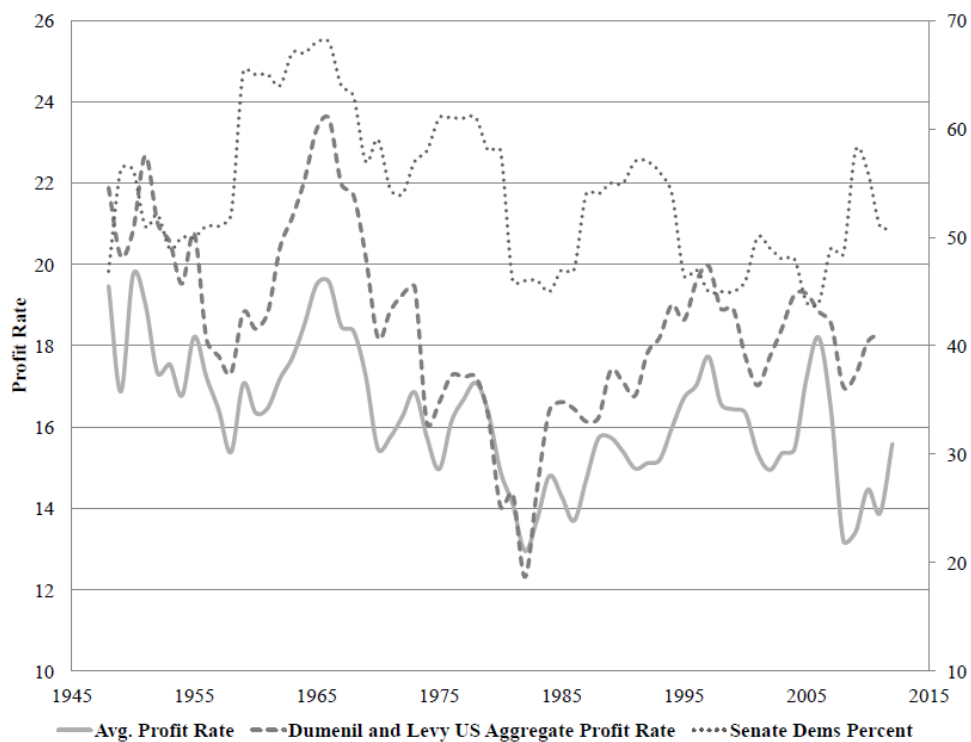
of Senate Democrats.

Figure 5.1: The profit rate and Senate Democrat percentage (right axis) through time.

5.2 Executive Branch Model

The Executive branch of government can influence industry-level profitability through the administration and application of rules and regulatory policy. If, however, the State is relatively autonomous from capitalists, changes in the political composition of the Executive branch (and therefore also in the creation and enforcement of rules) should have no statistically significant influence on changes in the profit rate at the industry level.

Consider the following simple specification (equation 16), which posits that the rate of profit is a function of changes in the political composition of the Executive branch, controlling for overall class conflict and macroeconomic conditions.

$$\Delta\ ProfitRate = \beta 1(1\text{-}D) + \beta 2(D)$$
$$+\ \beta 3\Delta Executive^*(1\text{-}D) + \beta 4\Delta Executive^*(D) \qquad (16)$$
$$+\ \beta 5 Laborshare + \beta 6 Outputgap +\ e$$

D is a dummy variable for years greater than or equal to 1980. *Δ Executive* is a dummy variable representing a change in the ideological composition of the Executive branch (equal to one if a change occurs, zero otherwise). *Laborshare* is an index of the labor share of total U.S. income and reflects the conflict and relative power balance between labor and capital (data from St. Louis Federal Reserve 2014). *Outputgap* is actual GDP divided by potential GDP in 2005 dollars and controls for overall macroeconomic conditions and the business cycle (data from St. Louis Federal Reserve 2014). The OLS time-series regressions in each industry were estimated using robust standard errors with

the constant term suppressed.

Coefficient estimates of this model are displayed in Table 5.2. While not conclusive, the results are consistent with the empirical hypothesis. Specifically, results indicate that changes in the political composition of the Executive branch of government *are not associated* with changes in the profit rate for any industry prior to 1980. In contrast to this, results indicate that after 1980 changes in the political composition of the Executive branch of government *are associated* with changes in the profit rate for the Durable goods and FIRE industries.[39] Overall, the findings are consistent with the central hypothesis concerning the State's relative autonomy prior to 1980 and its lack thereof after.

The coefficient estimates also indicate that labor's share of national income can be a significant negative factor contributing to changes in the profit rate. The following industries display a statistically significant (negative) coefficient for this variable, meaning that an increase in labor's share of total income decreases the rate of profit: agriculture, durable goods, nondurable goods, transportation, wholesale trade, retail trade, and the two broad measures of the profit rate (average and aggregate). This finding highlights one potential motivation for U.S. capitalists to seek a larger (global) pool of cheap labor and thereby weaken the bargaining power of domestic workers. Korkut Erturk suggests in a recent paper that this changed the balance of power between capitalists and workers and turned the strategic interaction from a basic prisoners' dilemma into a one-sided prisoners' dilemma (Erturk 2015). It is one-sided

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[39] The sign of the FIRE industry Executive branch coefficient post 1980 is negative, while the sign of the durable goods industry Executive branch coefficient post-1980 is positive, a result that is not explored in further detail here.

Table 5.2. Coefficient estimates of the Executive branch model

Executive Branch Model

Profit Rate	Pre 1980 Dummy	Post 1980 Dummy	Δ Executive Pre 1980	Δ Executive Post 1980	Agg. Labor Share	Agg. Output Gap	Obs.
Δ Agriculture	6.45* (3.47)	6.07* (3.33)	.25 (.18)	.29 (.37)	-.04* (.02)	-1.56 (1.71)	64
Δ Mining	-8.3 (13.12)	-7.93 (12.84)	-.01 (.52)	-.03 (.83)	-.04 (.07)	11.98 (7.76)	64
Δ Construction	-2.68 (36.7)	-1.02 (35.65)	.28 (2.32)	.97 (2.36)	.02 (.28)	-.90 (24.57)	64
Δ Durable goods	36.49* (20.24)	34.99* (19.79)	-1.17 (2.43)	2.24** (1.03)	-.56*** (.14)	23.24 (15.65)	64
Δ Non Dur. Goods	5.46 (13.48)	5.03 (13.01)	-.18 (.76)	.35 (.87)	-.30*** (.10)	26.16** (11.66)	64
Δ Transportation	8.40 (7.20)	8.22 (7.03)	-.13 (.18)	.04 (.47)	-.09* (.05)	1.24 (3.72)	64
Δ Utilities	3.22 (5.88)	3.09 (5.76)	-.11 (.21)	-.09 (.43)	-.001 (.04)	-3.01 (2.67)	64
Δ Wholesale Trade	-6.18 (28.92)	-5.73 (28.17)	-.96 (3.09)	2.21 (1.55)	-.78*** (.25)	85.3** (40.68)	64
Δ Retail Trade	28.19** (12.06)	28.26** (11.74)	1.47 (1.25)	.78 (.59)	-.30*** (.11)	2.62 (12.04)	64
Δ FIRE	10.91 (15.90)	10.34 (15.56)	.04 (.41)	-1.23* (.67)	.05 (.09)	-15.05* (8.31)	64
Δ Services	9.16 (6.08)	8.96 (5.83)	-.37 (.32)	.30 (.44)	-.05 (.04)	-3.73 (3.64)	64
Δ Average	8.42 (6.02)	8.07 (5.90)	-.13 (.52)	.16 (.35)	-.12*** (.05)	4.78 (4.51)	64
Δ Aggregate	14.45** (6.11)	14.15** (6.01)	-.08 (.71)	.14 (.56)	-.14*** (.05)	.16 (5.21)	63

Estimated coefficients listed using robust Standard Errors. Standard Errors listed in parenthesis. *p<.10, **p<.05, ***p<.01.

because workers do not have sufficient power to retaliate when in competition with a global supply of labor.

The empirical results of this model, while consistent with the hypothesis tested, are not conclusive. The main reason these results are not conclusive is that there are only two industries for which the State has a statistically significant influence (durable goods and FIRE industries) after 1980. A more robust finding would be a relationship in several or most of the industries after 1980. Despite this, however, the results support the State's relative autonomy prior to 1980, and are indicative that it may not be relatively autonomous in certain industries for the neoliberal era after 1980.

Another difficulty here is that there might be other ways to measure the State apparatus. For instance, changes in *regulation intensity* can be a tangible example of how political influence is exerted in the economy. There is no easy way, however, to measure regulation or its intensity (Levi-Faur 2011). This is the main problem scholars in the *regulation capture* literature have run in to in defining and measuring regulation and its capture (Carpenter and Moss 2013; Carpenter 2013). In the absence of any direct measure, various proxy variables can be considered as a second-best option.

One particular proxy variable can be motivated through the strand of regulation capture literature that focuses on *legislative capture,* also called *capture in statute* (McCubbins et al. 1987; Hall and Wayman 1990; Huber and Shipan 2002). This strand of literature suggests that the preferences of politically powerful economic actors can be hard-wired into legislative-based regulatory statutes. For instance, McCubbins et al. suggest that "*political actors stack the deck in favor of constituents who are the intended beneficiaries*" and therefore that "the administrative process can be designed to assure

that the outcomes will be responsive to the constituents that the policy is intended to

favor" (Mccubbins et al. 1987, p.261, italics in original). By contrast, if the State is

instead relatively autonomous, *outcomes* (i.e., differential profits) must not be

"responsive to the constituents."

Thus, one possible proxy for the regulation intensity of the State can be the

percentage of Democrats in the U.S. Senate.[40] Similar to views expressed in national

surveys (Swift 2013), the Democratic Party is quite often associated with increased

economic regulation of markets within the academic literature (e.g., Teske 2004, p.129)

on a host of issues ranging from labor markets (Gregory and Katz 1979) to the

environment (Revesz 1997), and from international trade (Baldwin and Magee 2000) to

health care (Navarro et al. 2006). The second model below thus assumes that an increase

in the percentage of Democrats in the U.S. Senate is an indicator of increased regulation

intensity at the margin over an indeterminate time horizon, and examines how it is related

to industry profit rates.

5.3 Legislative Branch Model

There are three main complications to consider when using time series data of the

type in this research. Discussed in detail below, these complications include (i) the

direction of causality between variables; (ii) the potential for spurious regression (a type

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[40] Some may object to the use of this variable as a proxy citing the changing nature of the Democratic Party over time. While it is true that there has been an electoral shift on *social* issues (that are temporally and geographically dispersed), the Party's relationship to economic regulation has remained relatively constant. The social issues alluded to include the Dixiecrat movement in the late 1940s, the "southern strategy" in the late 1960s into the 1970s, and the "Reagan Democrats" of the Northeastern U.S. in the 1970s and 1980s. Statistical tests with respect to the year of structural break indicate a change in the relationship between Senate Democrats and the profit rate is best seen in the year 1980, not dispersed over time.

of false causation) caused by nonstationary time series;[41] and (iii) potentially cointegrated time series (a type of common drift).

The first complication concerns the direction of causality among variables, or the way in which changes in the dependent variables are "caused" by changes in the independent variables. Peter Kennedy suggested that although it is not possible to determine statistical causality using the dictionary definition of the term, "Granger developed a special definition of causality which econometricians use in place of the dictionary definition" (Kennedy 2003, p.74), one that usually implies "precedence." Bivariate Granger-causality tests indicate that for at least two industries (agriculture and transportation) the direction of Granger-causality between the rate of profit and Senate Democrats percentage could run in either direction.[42] This mix of causality between economic and political variables is consistent with prior literature (e.g., Volscho and Kelly 2012). According to Poulantzas (1973), the economic sphere (i.e., the profit rate) determines the political sphere (i.e., Senate Democrats) "in the last instance." Poulantzas' contention was that *the economic* determines *the political* through the structural relationships in a particular mode of production.

In analyzing economic time series, it is also important to distinguish whether each series is stationary or nonstationary.[43] Ordinary regression models – like those previously depicted – have the potential to be misleading when regressed variables are nonstationary, what is known in the literature as spurious regression (Granger and

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[41] "A nonstationary series is said to be integrated of order d, denoted $I(d)$, if it becomes stationary after being first differenced d times (Greene 2007, p.740)."

[42] Dickey-Fuller unit root test with trend are listed in Appendix A.

[43] Nonstationary series are known also as *integrated* or *unit-root*. Stationary time series have a fixed mean while nonstationary time series do not. When two series are trending together, spurious regression can result.

Newbold 1974). William Greene defines the problem of nonstationarity as follows.

> In single time-series analysis […] it has long been recognized that estimated regression relations can be distorted by nonstationarity in the data. What appear to be persistent and strong regression relationships can be entirely spurious and due to underlying characteristics of the time-series process rather than actual connections among the variables (Greene 2007, p.243).

This second complication – spurious regression caused by nonstationarity – is commonly assessed in the literature (e.g., Volscho and Kelly 2012) using Dickey-Fuller (1979) unit root tests with trend. This type of statistical test explores the extent to which the data are stationary (no unit root) or nonstationary (unit root). Greene suggested "[t]he Dickey-Fuller procedures have stood the test of time as robust tools that appear to give good results over a wide range of applications" (Greene 2008, p.753).

For several variables – including Senate Democrats percentage, many of the individual industry profit rates, and the aggregate profit rate – Dickey-Fuller unit root tests indicate that the presence of a unit root (that is, nonstationarity) cannot be rejected. This is the case for Senate Democrats (t = -2.9) and for the aggregate profit rate (t = -2.4) – the critical value for both is -3.49. The test statistics indicate a mix of stationary and nonstationary variables, which means the potential for spurious regression must be recognized and empirically assessed. Theoretical and empirical research on the tendency of the profit rate to fall over time (e.g., Li et al. 2007; Basu and Manolakos 2013) indicates that questions of stationarity with respect to the profit rate cannot be easily dismissed.

One way to account for the problem of spurious regression is to use the first difference of the time series in question. This method is not always ideal, however, especially when both *short-run and long run* relationships might exist within the data.

Engle and Granger (1987) suggested that cointegrated time series data (the third complication) can be thought of as adjusting to each other over time through short and long-run relationships and proposed a two-step error-correcting method for its correction. Engle-Granger cointegration tests indicate that the null hypothesis of "no cointegration" cannot be rejected in several variables; Appendix A lists these statistics. An inability to reject the null hypothesis means there might be some long-term, potentially equilibrating underlying common process between variables. Recent empirical work studying the intersection of politics and economics (e.g., Volscho and Kelly 2012, p.687) tend to utilize an error-correction methodology to account for such underlying processes.

Because of these empirical concerns, a standard OLS specification that motivates the discussion is followed by a system of equations error-correction model (ECM) of the relationship between Senate Democrats (regulation intensity) and the rate of profit. The ECM addresses issues of causality and spurious regression that might prevent accurate interpretation of the standard OLS estimates (Engle and Granger 1987). The ECM does so by simultaneously estimating the relationship as a long-run error correction process across both the economic and political spheres, with short-run adjustment coefficients indicating any disequilibrium dynamics.

The previous model was an attempt to assess the relative autonomy of the State through the statistical relationship between industry-level profit rates and changes in the political composition of the Executive branch of government. Yet because the State's influence on the profit rate can occur through other mechanisms or be spread across several years or decades, its impact does not take place exclusively through (short-run) changes in the Executive branch of government. Influence by the State over economic

industries is also channeled through Congressional committee assignments and leadership and the drafting and implementation of regulatory policy, among other channels.

The basic least squares relationship between Senate Democrats (s) and the average profit rate (π) can be specified as in equation (17). A scatter plot with a fitted OLS regression line (coefficients found in equation 18) is displayed in Figure 5.2.

$$\pi_t = \beta 0 + \beta 1 * s_t + u \tag{17}$$

With sixty-five yearly observations the estimated coefficients of equation (17) using robust standard errors are
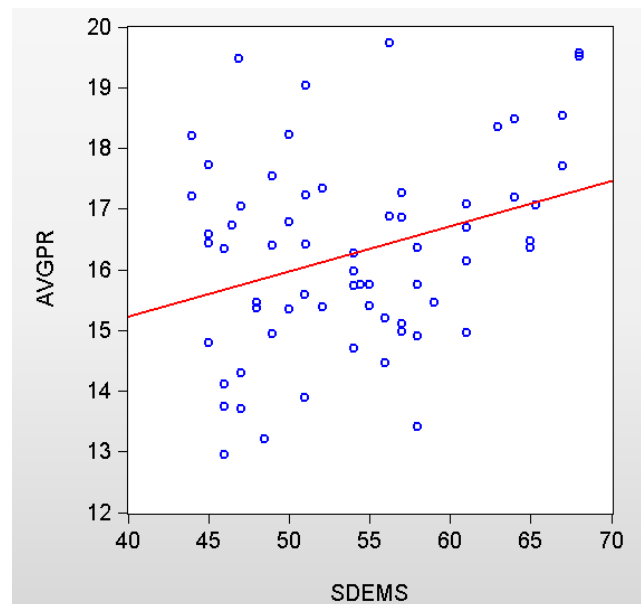
$$\pi_t = 12.2 + .07s_t + u_t \tag{18}$$

Figure 5.2. Data from 1948-2012 with fitted OLS regression line.

The intercept coefficient estimate ($\beta0 = 12.2$) is statistically significant at the 99 percent

level (t=7.57) and the slope coefficient estimate ($\beta1 = .07$) is significant at the 90 percent

level (t=2.57). This simple regression specification, however, does not address the

difference that may exist between different periods (partitions) in the data. By

partitioning the data into two periods, this potential difference in estimated slope can be

isolated. The structure of this two-period regression model (with the constant term

suppressed) can be specified as in equation (19).

$$\pi_t = \beta1 \ (1\text{-}D) + \beta2(1\text{-}D)s_t + \beta3(D)s_t + \beta4(D) \tag{19}$$

D is a dummy variable for years greater than or equal to 1980. With the same sixty-five

yearly observations, the estimated coefficients of equation (19) using robust standard

errors are

$$\pi_t = 16.03(1\text{-}D) + .02(1\text{-}D)s_t - .09(D)s_t + 19.57(D) \tag{20}$$

The pre-1980 and post-1980 dummy terms are significant at the 99 percent level (t=7.46

and t=7.94, respectively). The pre-1980 slope coefficient estimate ($\beta2=.02$) is not

statistically significant (t=.57), while the post-1980 slope coefficient estimate ($\beta3= -.09$)

is significant at the 90 percent level (t= -1.73). These slope estimates reflect the

differences in slope that exist in the relationship prior to and after 1980, as seen in Figure

5.3. As described above, a Dickey-Fuller (1979) unit-root test on the residuals indicates

that the null hypothesis of unit-root cannot be rejected for many of the industry-level
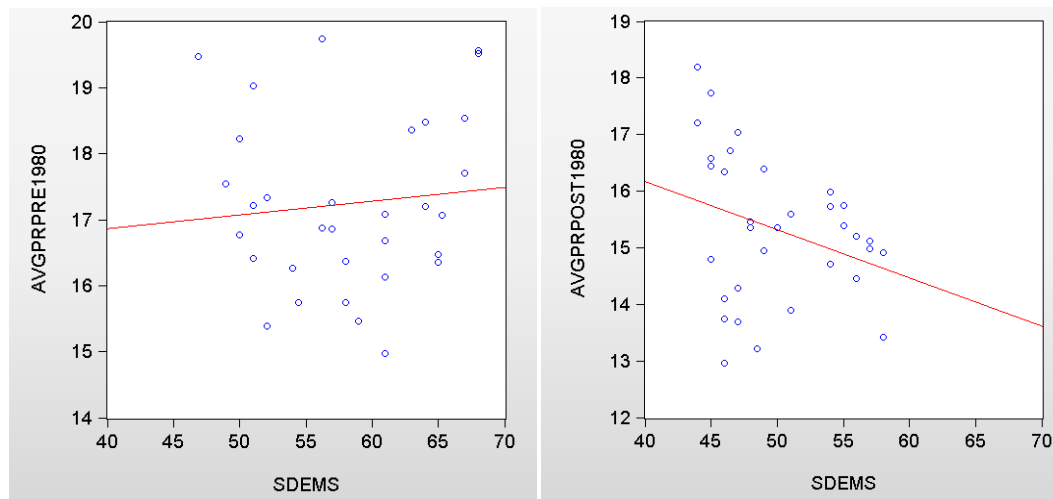
Figure 5.3: Pre- and post-1980 partitioned data with fitted OLS regression lines.

profit rates as well as for Senate Democrats (test statistics listed in Appendix A). This is

indicative of a potential for cointegrated time series, as well as spurious regression.

5.4 Two-equation System Error-correction Model

An error correction model is superior to the previous specifications because it is

less likely to reflect spurious regression when using both nonstationary and cointegrated

data. The following two-equation error-correction model is a simple representation of the

interaction between the average profit rate (π) and Senate Democrats (S; regulation

intensity). One interpretation of this model is that there is a long-run relationship between

π and S (the solid sloped lines in the diagrams that follow), plus a short-run

disequilibrium adjustment captured by α_i (the directional arrows in the diagrams that

follow). A two equation simultaneous system ECM can be represented as

$$\triangle \pi = \alpha_1 (\pi_{t-1} - (\beta_1 (1-D)_{t-1} + \beta_2 (1-D)_{t-1} S_{t-1} + \beta_3 (D)_{t-1} S_{t-1} + \beta_4 (D)_{t-1}))$$
$$\triangle S = \alpha_2 (\pi_{t-1} - (\beta_1 (1-D)_{t-1} + \beta_2 (1-D)_{t-1} S_{t-1} + \beta_3 (D)_{t-1} S_{t-1} + \beta_4 (D)_{t-1}))$$

(21)

where π is the average rate of profit, α_i is the error correction rate (i.e., how quickly and in what direction adjustment back to equilibrium is made), D is a dummy variable indicating years 1980 and later, and S is the percentage of Democrats in the U.S. Senate. The long-run relationships are captured by the second set of parenthesis, which is the disequilibrium between the rate of profit and Senate Democrats (regulation intensity). The model passes all the conventional tests for autocorrelation, residual normality, and heteroskedasticity. Iterative OLS coefficient estimates for this two-equation model are

$$\triangle \pi = .005(\pi_{t-1} - (42.9(1-D)_{t-1} - .43(1-D)_{t-1}S_{t-1} - .84(D)_{t-1}S_{t-1} + 56.8(D)_{t-1}))$$
$$\triangle S = -.50(\pi_{t-1} - (42.9(1-D)_{t-1} - .43(1-D)_{t-1}S_{t-1} - .84(D)_{t-1}S_{t-1} + 56.8(D)_{t-1}))$$

$$(22)$$

The signs of the adjustment coefficients α_1 and α_2 of equation (22) indicate that the system is dynamically *unstable* (refer to Figure 5.4). Economic adjustment, α_1, is not statistically significant (t=.06), while political adjustment, α_2, is significant at the 95 percent level (t= -2.01). Dummy terms $\beta 1$ and $\beta 4$ are significant at the 99 percent level (t=2.71 and t=2.71, respectively). The pre-1980 slope coefficient ($\beta 2 = -.43$) is not statistically significant (t=-1.61), while the post-1980 slope coefficient ($\beta 3 = -.84$) is significant at the 90 percent level (t= -1.99). These estimates are summarized and portrayed in Figure 5.4. To understand the short-run dynamics of the system, suppose there is a positive disequilibrium (that is, a point above either of the solid sloped lines) in the profit rate-Senate Democrats relationship, such as might occur at point "A." The estimated alpha coefficients ($\alpha_1 = .005$ and $\alpha_2 = -.5$) from equation (22) indicate that the short-run adjustment process is *unstable*, meaning that the system does not converge back
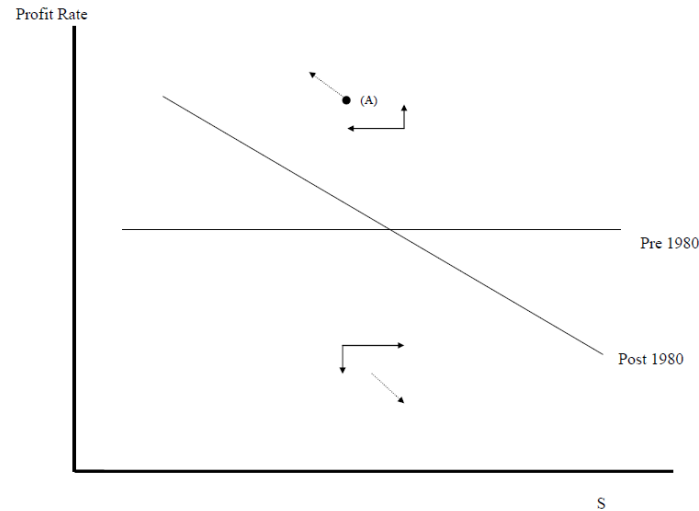
Profit Rate

Pre 1980

Post 1980

(A)

S

Figure 5.4. Two equation ECM with short-run adjustment coefficients

to equilibrium.

To see why, notice that a positive disequilibrium at point "A" corresponds with an *increase* in the profit rate (a positive sign for α_1) at the same time as the percentage of Democrats *decreases* (a negative sign for α_2). The reverse is true if the disequilibrium is negative (that is, a point below the solid sloped lines). In terms of long-run characteristics, the estimates suggest that there is a difference in slope between time period subsets (i.e., a difference between *β2* and *β3*) in the data sample corresponding to the year 1980. Prior literature on the profit rate supports this idea, suggesting that near the year 1980 there was a transition to a new strand of capitalism known as neoliberalism (Shaikh and Tonak 1994, p.122ff; Dumenil and Levy 2011). Neoliberal capitalism is characterized by a series of political and economic changes that (temporarily) halted a fall in the profit rate. From an empirical perspective, one way to determine the optimal year for use as a structural-break dummy variable is to minimize the determinant of the residual covariance matrix of the two-equation system. The results of this test, plotted in

Figure 5.5, indicate that 1980 is the optimal year for use as a structural break. One drawback therefore of equation (21) is that it does not contain partitioned short-run disequilibrium adjustment coefficient estimates (alphas) for years prior to as well as after 1980. To remedy this, the second iteration of the model separates the short-run alpha coefficients to include both pre- and post-1980 periods. This method will then provide estimates of the disequilibrium rate of adjustment separately for both periods for each equation.

5.5 Two-equation System ECM with Separate Short-run Adjustments

This second specification of the error-correction model uses separate adjustment coefficients to identify not only whether the slope coefficients change across periods, but also whether the direction of disequilibrium adjustment changes across periods. Again estimated simultaneously, the model has a form described by equation (23).
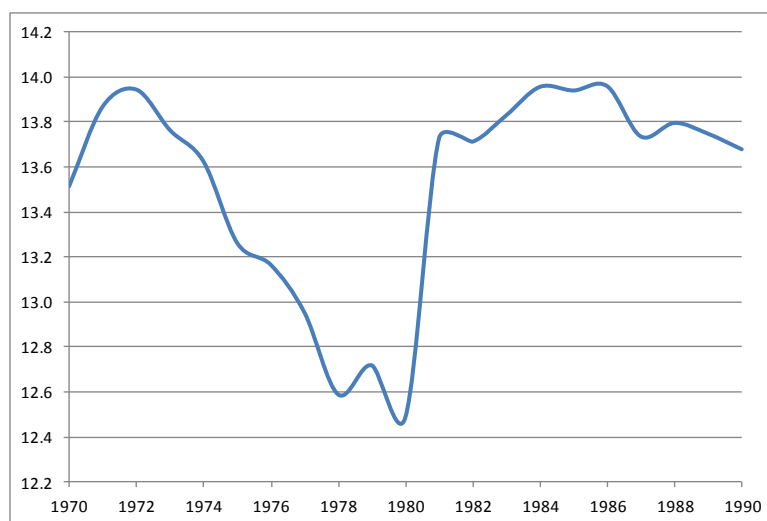

Figure 5.5. Determinant of the residual covariance matrix for the two-equation system.

$$\triangle\pi = (\alpha_1(1-D)+\alpha_2(D))(\pi_{t-1}-(\beta_1(1-D)_{t-1}+\beta_2(1-D)_{t-1}S_{t-1}+\beta_3(D)_{t-1}S_{t-1}+\beta_4(D)_{t-1}))$$
$$\triangle S = (\alpha_3(1-D)+\alpha_4(D))(\pi_{t-1}-(\beta_1(1-D)_{t-1}+\beta_2(1-D)_{t-1}S_{t-1}+\beta_3(D)_{t-1}S_{t-1}+\beta_4(D)_{t-1}))$$

(23)

The only change between equation (21) and (23) lies within the first set of parenthesis, which is the now partitioned short-run disequilibrium readjustment process, represented by the α_i coefficients. D is again a dummy variable for years greater than or equal to 1980. Similar to equation (21), the long-run relationships lie within the second set of parenthesis, which is the disequilibrium between the rate of profit and Senate Democrats (regulation intensity). π is the average rate of profit and S is Senate Democrats percentage. The estimated OLS coefficients of equation (23) are

$$\triangle\pi = (.02(1-D)-.005(D))(\pi_{t-1}-(48.5(1-D)_{t-1}-.52(1-D)_{t-1}S_{t-1}-.74(D)_{t-1}S_{t-1}+51.8(D)_{t-1}))$$
$$\triangle S = (-.41(1-D)-.57(D))(\pi_{t-1}-(48.5(1-D)_{t-1}-.52(1-D)_{t-1}S_{t-1}-.74(D)_{t-1}S_{t-1}+51.8(D)_{t-1}))$$

(24)

The long-run slope coefficients estimates displayed in equation (24) remain consistent with those estimates in equation (22) in that there is no significant relationship prior to 1980 and a significant negative relationship after ($\beta3$= -.74, t=-1.67). The short-run adjustment estimates also continue to indicate that the system is dynamically unstable prior to 1980. To see why, notice from equation (24) that α_1=.02 has a positive sign, while α_3= -.41 has a negative sign. This means that prior to 1980, a negative disequilibrium (point A in Figure 5.6) corresponds with a decrease in the profit rate and an increase in the percentage of Democrats in the Senate.
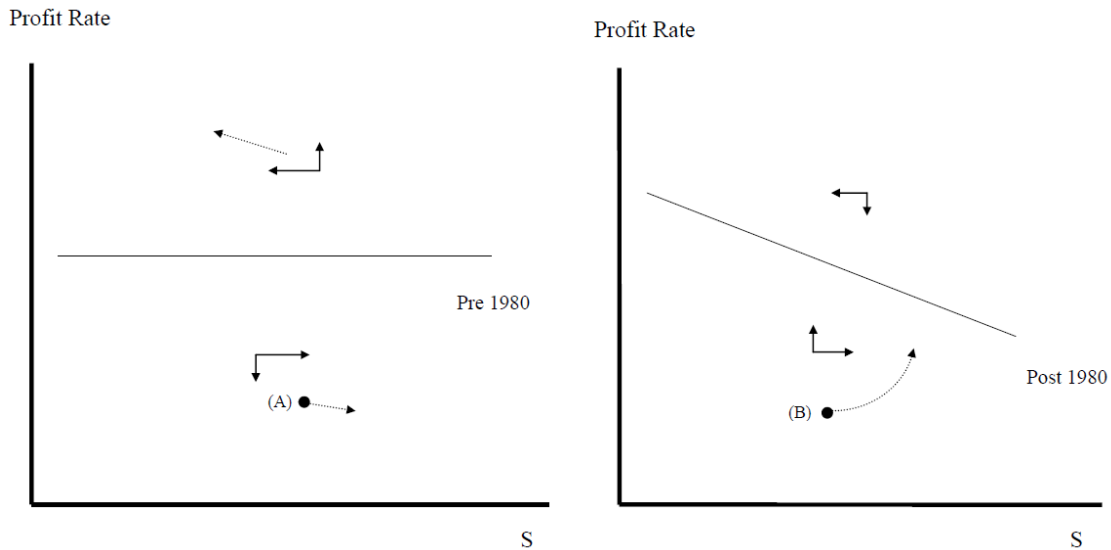
Figure 5.6. Two equation ECM with partitioned short-run adjustment coefficients.

By partitioning the short-run adjustment coefficients, it can also be seen that the

system becomes dynamically *stable* after 1980. To see why, notice from equation (24)

that α_2= -.005 is negative, and α_4= -.57 is also negative. This means that a negative

disequilibrium after 1980 (point B in Figure 5.6) corresponds with an increase in the

profit rate and an increase in the percentage of Democrats. The reverse is true for a

positive disequilibrium. In terms of statistical significance, although the post-1980

adjustment coefficients α_2 (t=-1.19) and α_4 (t=-1.59) have higher levels of statistical

significance than do the pre-1980 coefficients α_1 (t=.17) and α_3 (t=-.04), the post-1980

coefficients are not statistically significant even at the 90 percent level. The estimates

found in equation (24) can be summarized as portrayed in the following diagram. The

empirical estimates behind Figure 5.6 indicate that prior to 1980 the short run relationship

between the profit rate and Senate Democrats percentage is unstable (point A). That is,

short-run disequilibria are not associated with changes in the political composition of the

U.S. Senate or with changes in the profit rate prior to 1980.

Technically, this means that even small deviations from long-run equilibrium tend not to converge, but in practice, this can be interpreted to mean that changes in regulation intensity do not alter the profit rate prior to 1980. In addition, after 1980 the data suggest that the system becomes dynamically stable (that is, tends to converge back to equilibrium) in the short-run (point B). This means that after 1980 – *assuming that individual level changes are also reflected at the aggregate level* – it is at least possible to increase profitability through influencing or changing regulation intensity (i.e., to re-regulate in one's favor) *in the short-run,* but this is negative in the *long run*. Putting this result in terms of the main hypothesis, an increase in regulation's intensity could remedy a low rate of profit only in the short-run, similar to the type of reactionary regulation that is a common solution to crises today. In the long run, however, an increase in regulation intensity is associated with lower average profitability after 1980. Compare the analytic result from chapter three with point B in Figure 5.6; deregulation can be profitable in the short run, but in the long run it makes collective action much more problematic.

Although the analysis lies at the level of the average profit rate for eleven major U.S. industries, the empirical estimates obtained are consistent with the central hypothesis that the State is relatively autonomous prior to but not after 1980. This interpretation rests on four related empirical findings. The first of these findings is a dynamically *unstable* short-run relationship between the profit rate and Senate Democrats prior to 1980, represented by the arrows in the left-hand side of Figure 5.6. The second finding is a dynamically *stable* short-run relationship after 1980, represented by the arrows in the right-hand side of Figure 5.6. The third is a statistically insignificant pre-

1980 long-run relationship, represented by a horizontal sloped line in the left side of

Figure 5.6. Finally, there is a statistically significant post-1980 long-run relationship,

represented by a negative sloped line in the right side of Figure 5.6.

5.6 Application to the FIRE Industry

It is difficult, however, to gauge the degree to which profitability in particular

industries is reflected at the level of average profitability of all eleven industries. For

example, a change in regulation intensity may induce a rise in profitability in one

industry at the same time as an equivalent fall in profitability in another, offsetting a

change in overall average profitability. Although an unlikely scenario (in part due to the

method of calculation of the profit rates), this does represent a complication that might

cast doubt on the interpretation of the estimates. To address this concern, the model is

next applied to one of these eleven industries, the FIRE industry.

The finance-insurance-real estate industry occupies an important position in U.S.

capitalism (Dumenil and Levy 2011), and is one industry in which the capitalist class is

likely to be most difficult to unify because of the liquid nature of its capital stock and its

focus on re-regulation after 1980 (Green 2012, 2014). In order to avoid falling behind

others, opportunistic re-regulation through lobbying and other types of political influence

became essential to maintaining a competitive edge.

Applying the above-developed empirical methodology to the FIRE sector can

shed light on the relationship between the profit rate and Senate Democrats in this

particularly influential sector of the economy and allay concerns with respect to the

interpretation of the previous results. With the identical functional form as in equation

(24), the estimated coefficients using the FIRE sector profit rate (π) and Senate

Democrats (S) are found in equation (25).

$$\Delta\pi = (.02(1-D) - .06(D))(\pi_{t-1} - (-91.0(1-D)_{t-1} + 1.87(1-D)_{t-1}S_{t-1} - 1.20(D)_{t-1}S_{t-1} + 81.6(D)_{t-1}))$$
$$\Delta S = (.16(1-D) - .31(D))(\pi_{t-1} - (-91.0(1-D)_{t-1} + 1.87(1-D)_{t-1}S_{t-1} - 1.20(D)_{t-1}S_{t-1} + 81.6(D)_{t-1}))$$

$$(25)$$

The signs of the adjustment coefficients (α_1 through α_4) of equation (25) indicate that the

system of equations is dynamically *unstable* prior to 1980 but dynamically *stable* after

(see Figure 5.7), which is consistent with the central hypothesis and with empirical

estimates found in equation (24) above. α_1, α_2, and α_3 are not statistically significant

(t=.35, t= -.74, and t=.90, respectively). The post-1980 political adjustment coefficient,

α_4, is statistically significant at the 90 percent level (t=-1.85). This coefficient can be

interpreted to mean that changes in regulation intensity can return the FIRE rate of profit
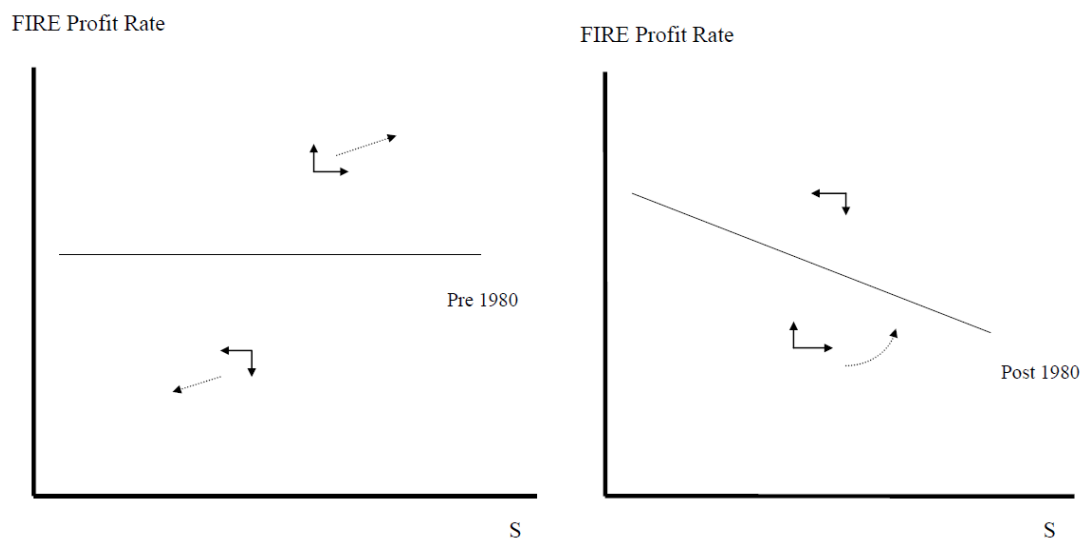

Figure 5.7. Two equation ECM for FIRE with partitioned short-run coefficients.

to its negatively sloped long run equilibrium after 1980 but not before. The pre-1980 slope coefficient ($\beta2 = 1.87$) is not statistically significant (t=1.16) and the post-1980 slope coefficient ($\beta3 = -1.20$) is significant at the 90 percent level (t= -1.69). These coefficient estimates can be summarized and portrayed as in Figure 5.7. In this application to the FIRE industry, the empirical estimates (found in equation (25)) are consistent with the central hypothesis that the State is relatively autonomous prior to but not after 1980.

5.7 Empirical Summary

This chapter has been an empirical assessment of the State's relative autonomy. Two models of the relationship between the State and industry level profitability were developed in this chapter. The first model assessed the relative autonomy of the State before and after 1980 in terms of the effect of the Executive branch of government on industry-level profitability. Results of this model suggest that changes in the Executive Branch of government do not correspond with statistically significant changes in the rate of profit for any industry prior to 1980, but do so in two industries after. This is consistent with the State's hypothesized relative autonomy prior to 1980, and consistent with but not conclusive with respect to its lack of relative autonomy after 1980. The estimates also indicate that the aggregate distribution of income (i.e., class conflict) between capitalists and workers is an important underlying factor in changes in the rate of profit for a majority of the industries in the sample. This empirical finding supports recent theoretical work on the changing nature of class conflict in a globalized economy (e.g. Erturk 2012, 2015).

The second model – a simultaneous-system error-correction model of the Legislative Branch of government – was an attempt to assess the long-run equilibrium relationship and short-run adjustment dynamics between Senate Democrats (a proxy for the intensity of regulation) and average profitability of capitalists, as well as an application of the model to a specific industry (FIRE). Results suggest that the relationship is statistically different before and after 1980 in terms of the short-run dynamics and in the long-run slope estimates. In particular, estimates suggest that the relationship between average profitability and Senate Democrats is both flat and dynamically unstable prior to 1980, consistent with a relatively autonomous State. After 1980, this relationship is negative and dynamically stable, which is consistent with a lack of relative autonomy of the State. The application of the model to the FIRE industry is also consistent with these results, as well as with results of the Executive branch model. The empirical results of each model, however, are not conclusive, and future work should investigate the robustness of these findings using alternative methods and sources of data.

CHAPTER 6

CONCLUSION

This dissertation has argued that despite intense economic competition during the golden age of capitalism, autonomous regulatory institutions of the State functioned as a commitment device allowing capitalists to act in their enlightened (as opposed to narrow opportunistic) self-interest. The autonomy of regulatory institutions was undermined around 1980, and with it, the State's capacity to organize the collective interests of the capitalist class was eroded.

The hypothesis was assessed using descriptive, game-theoretic, and empirical methods. By revisiting the theory of the State, the organizational capacity of regulatory institutions with respect to the agency of the capitalist class was articulated. Building on prior literature, the political organization of the State was described as a club preventing free riding on collective contributions to club goods. That is, it excludes those outside the club from sharing benefits and precludes those inside the club from free riding on the cooperation of others. Yet for the club to be effective, the State's regulatory institutions must be both neutral and have the ability to maintain credible boundaries to impose sanctions on those acting opportunistically. The autonomy of these regulatory institutions was undermined around 1980, changing the strategic interaction among capitalists from one for which the payoff to cooperation was comparatively high to one for which the

payoff to opportunistic defection was comparatively higher. Factors contributing to the porous nature of regulatory boundaries included the rapid deregulation of several industrial sectors in conjunction with the institutionalization of a market-dictated approach to Statecraft (as embodied in the Civil Service Reform Act of 1978). The downward regulatory harmonization subsequently engendered compromised the ability of regulation to sanction free riders, which further incentivized opportunism and led to increased tax evasion and a race to the bottom by members of the capitalist class to skirt regulation and the costs they collectively shared. Since 1980, these collective costs – environmental, financial, and social – have been on the rise due to a failure of markets and institutions in their resolution. This historical depiction was formalized in a game-theoretic model. Theoretical predictions of the model indicate that the intensity of regulation functions as a commitment device for agents, which also determines the level of overall cooperation. Deregulation can be profitable for select players in the short run, but in the long run it makes acting collectively much more problematic.

Two empirical models were also developed to assess the main arguments. The first was a short-run OLS time-series model of the Executive branch of government and the rate of profit at the industry-level. Estimates of the model support the hypothesis that the State was relatively autonomous prior to 1980. Though not conclusive, estimates indicate the State lacked autonomy after 1980. The second model employed a two-equation simultaneous-system error-correction model developed to estimate the long-run equilibrium relationship and short-run adjustment dynamics between the intensity of regulation and industry profitability. Empirical estimates of this second model are consistent with the hypothesis that the State was relatively autonomous prior to 1980 and

was not after. The empirical findings also support predictions from the analytic model.

Future research will extend the theoretical, descriptive, and empirical components of this dissertation. In particular, the game-theoretic model can be used as a framework to assess regulatory policy. The linear expected payoff functions represent "levers" that policymakers can utilize to change the behavior of groups by altering individual incentives. This study examined one such lever in particular, the effect of regulation's intensity on the relative payoff to opportunistic behavior. Three policy levers not explored in depth in this research included means to increase the payoff to cooperation (such as through tax incentives or transfers), decreasing the payoff to defection, and increasing the sucker's payoff. Moving each of these levers in the desired way can increase the percentage of agents willing to cooperate over time. Dynamic simulations of the game-theoretic model can also shed light on how a given set of payoffs contribute to group selection (c.f. Simon, Fletcher, and Doebeli 2013).[44] This in turn can inform the set of policy choices with respect to the particular policy lever on which to focus, given a set of political and time constraints.

The game-theoretic model can also be extended to include different forms of time discounting. Different forms and rates of discounting will shift the expected payoff functions and can be incorporated as an approximation of informal norms or behavior in order to match more precisely those in regulated industries. Varying the rate at which future payoffs are discounted can also change their slope and functional form (i.e., linear versus nonlinear), which, in turn, shifts the equilibrium cooperation boundary.

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[44] A link to a video of such simulations, titled *Simulation of the evolution of cooperation by group selection,* can be found in the research cited.

The State's relative autonomy, which is a necessary condition for credible (and thus effective) regulation, will be tested in an alternative way utilizing data on lobbying expenditures and the rate of profit during two separate periods, 1951 to 1966 and from 1997 to the present. The empirical model of Chapter 5 can also be used in case studies of individual industries, in exploring the effects of political business cycles in different industries, or to examine trends in the industry-level rate of profit over time. Dynamic simulations of this model can also be estimated in order to ascertain the extent to which there is a convergence to equilibrium in the long run between the rate of profit and Senate Democrats.

Recent work on regulatory capture by Carpenter and Moss (2013) suggest that a large empirical gap exists in the literature. By developing an analytic and empirical methodology for assessing cooperation within the capitalist class and the potential impact of the State and regulation on economic profitability at the industry level, this research begins to fill this gap. More importantly, however, the question of interest to both scholars and policymakers is, with the unraveling of the institutional capacity for collective action during the neoliberal era, how can the capitalist State once again save capitalism from the capitalist class?

APPENDIX A

ECONOMETRIC TEST STATISTICS

Table A.1: Dickey-Fuller Unit Root and Engle-Granger Cointegration Tests

	Dickey-Fuller Unit Root Test[1]	Engle-Granger Cointegration Test[2]
Agriculture	-1.398	-1.800
Mining	-3.199*	-3.237*
Construction	-2.396	-2.284
Durable goods	-2.842	-2.819
Non Dur. Goods	-4.055***	-3.660**
Transportation	-1.930	-0.601
Utilities	-2.518	-1.987
Wholesale Trade	-2.268	-2.937
Retail Trade	-2.249	-3.487**
FIRE	-2.444	-2.847
Services	-1.902	-2.214
Average Profit Rate	-3.566**	-3.782**
Aggregate Profit Rate	-2.351	-2.737
Senate Democrats Percent	-2.909	-
(1) With trend. Null Hypothesis: Unit root		
(2) Null Hypothesis: Profit rate and Senate Democrats not cointegrated		

Table A.2: Granger Causality Tests

| Industry	Senate Democrats Percent	ΔSenate Democrats Percent
ΔAgriculture	2.52*	1.32
ΔMining	0.60	0.58
ΔConstruction	1.09	0.92
ΔDurable goods	1.01	0.75
ΔNon Dur. Goods	1.10	0.90
ΔTransportation	2.56**	2.44*
ΔUtilites	1.48	1.10
ΔWholesale Trade	0.74	0.96
ΔRetail Trade	0.59	0.42
ΔFIRE	0.49	0.38
ΔServices	0.21	0.37
ΔAvg. Profit Rate	1.75	1.18
ΔAggregate Profit Rate	1.18	0.95
Agriculture	0.71	0.68
Mining	0.09	0.16
Construction	1.47	0.85
Durable goods	0.81	0.15
Non Dur. Goods	0.80	0.21
Transportation	1.10	0.73
Utilities	1.58	1.25
Wholesale Trade	1.00	0.32
Retail Trade	1.14	0.47
FIRE	0.19	0.47
Services	0.37	0.32
Avg. Profit Rate	0.36	0.15
Aggregate Profit Rate	0.73	0.44
Note: Null Hypothesis: Profit rate does not Granger-cause Senate Democrats.		
Test statistics listed. *p<.10, **p<.05, ***p<.01.		

APPENDIX B

INDUSTRY RATES OF PROFIT
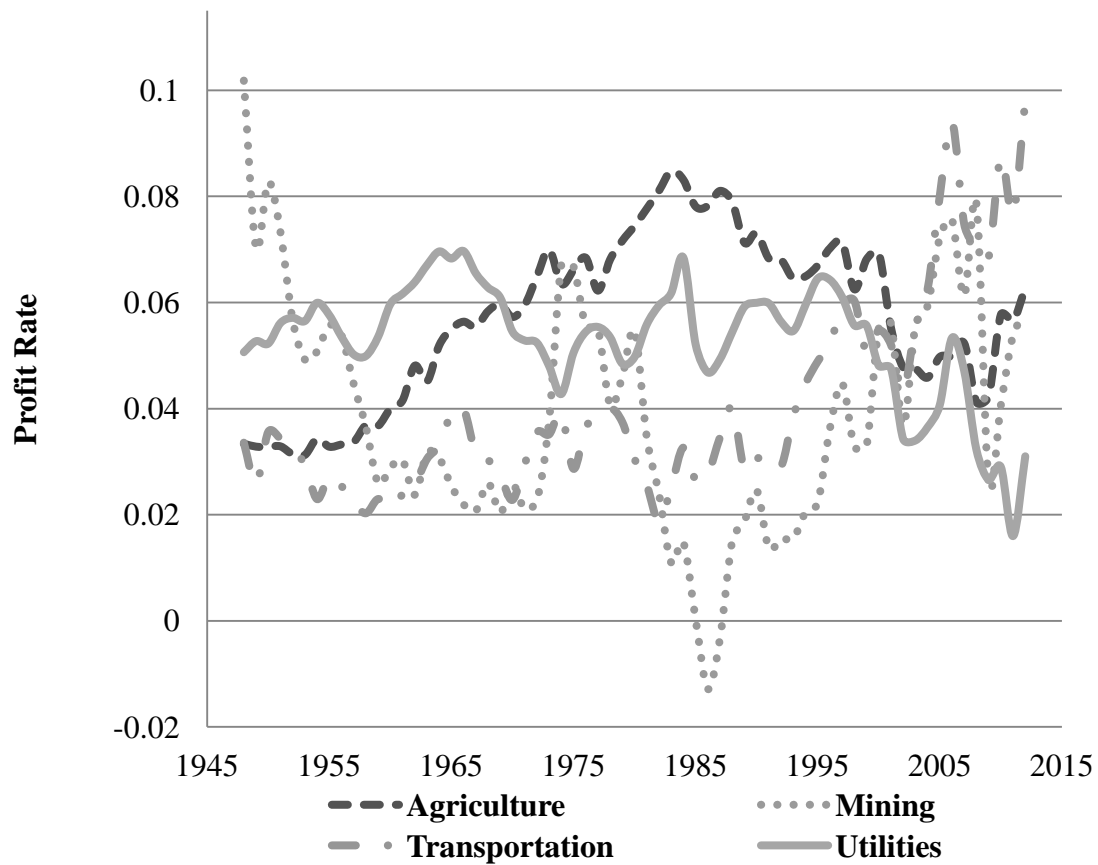
Figure B.1. Agriculture, mining, transportation, utilities profit rates, 1948-2012

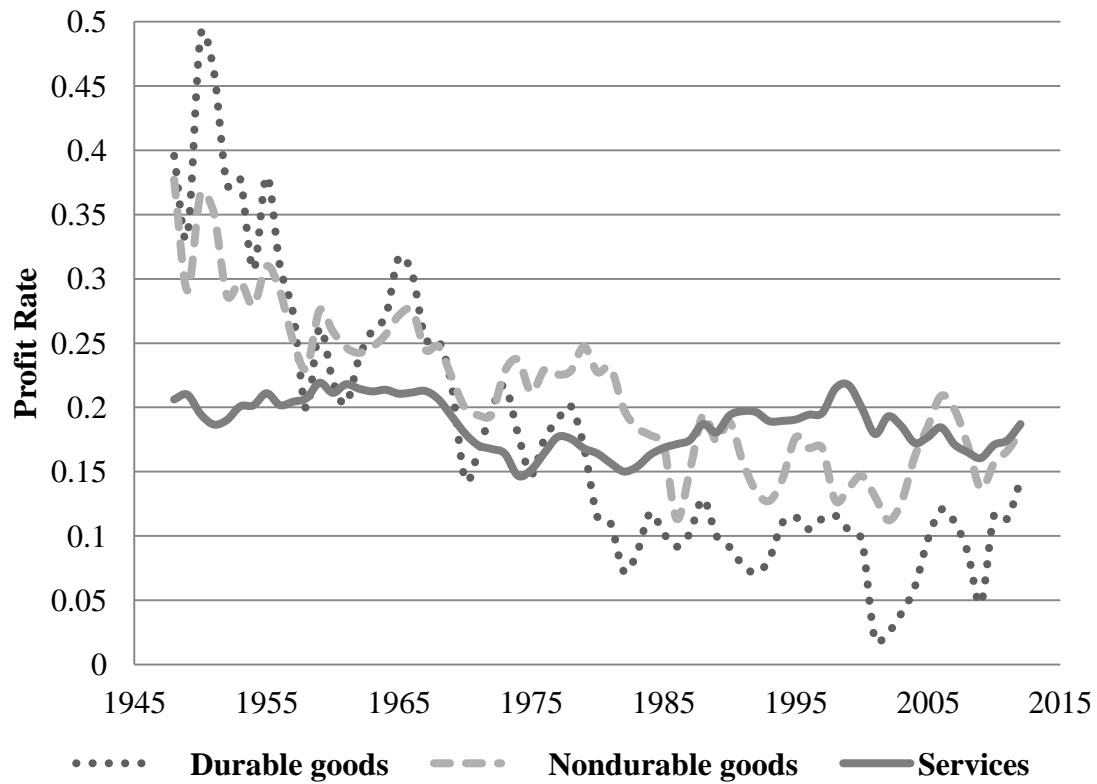Figure B.2. Construction, wholesale trade, retail trade profit rates, 1948-2012

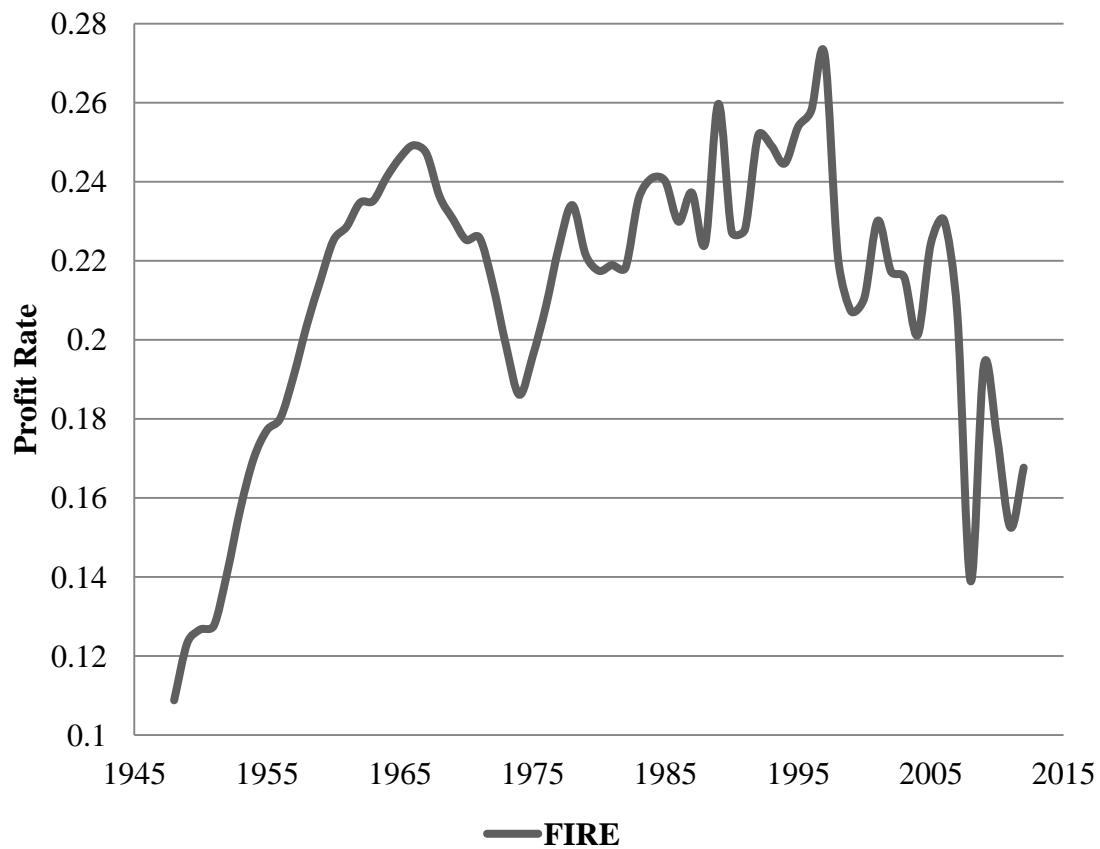Figure B.3. Durable goods, nondurable goods, services profit rates, 1948-2012

Figure B.4. Finance, insurance, real estate profit rate, 1948-2012

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