

COASE VERSUS THE COASIANS*

EDWARD GLAESER
SIMON JOHNSON
ANDREI SHLEIFER

Who should enforce laws or contracts: judges or regulators? Many Coasians, though not Coase himself, advocate judicial enforcement. We show that the incentives facing judges and regulators crucially shape this choice. We then compare the regulation of financial markets in Poland and the Czech Republic in the 1990s. In Poland, strict enforcement of the securities law by a highly motivated regulator was associated with a rapidly developing stock market. In the Czech Republic, hands-off regulation was associated with a moribund stock market.

I. INTRODUCTION

At the heart of economists' traditional skepticism about government regulation is the Coase theorem [Coase 1960]. The theorem states that when property rights are well defined and "transaction costs" are zero, market participants will organize their transactions in ways that achieve efficient outcomes. When they can do so, it is not necessary for the government to engage in "corrective" actions through taxes, regulations, or even legal rules. Financial markets are often used to demonstrate the Coase theorem's case against regulation. Advocates of the regulation of these markets point to a variety of potential failures, such as the ability of security issuers to "expropriate" both potential and existing investors through misrepresentation or profit diversion. Investors' fear of such expropriation prevents firms from raising external funds, and keeps efficient projects from being undertaken.

Not so, reply the Coasians. They point out that most securities transactions take place between sophisticated adults, and that both the buyers and the issuers of securities have available to them a vast range of private arrangements to achieve efficiency, including contracts such as corporate charters, certification by intermediaries, and various forms of bonding. Such contracts render most laws and regulations unnecessary [Stigler 1964; Easterbrook and Fischel 1991].

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On the face of it, the Coasians' argument is powerful. Yet it crucially relies, among other assumptions, on the possibility of effective judicial enforcement of complicated contracts. Judges must be able, and more importantly willing, to read complicated contracts, verify whether the events triggering particular clauses have actually occurred, and interpret broad and ambiguous language. These requirements on the judges apply as strongly to the judicial enforcement of laws, where the interpretation and application of particular statutes requires significant investment. In reality, courts in many countries are underfinanced, unmotivated, unclear as to how the law applies, unfamiliar with economic issues, or even corrupt. Such courts cannot be expected to engage in costly verification of the facts of difficult cases or contingencies of complicated contracts. Indeed, even when contracts are restricted by statutes, the courts may not have the resources or incentives to verify whether or how particular statutes apply.

Financial contracting illustrates these problems. When is the information that a firm's manager fails to disclose to shareholders "material," and hence has to be disclosed because of a statute or a contract? When does a corporation "abuse" minority shareholders, as opposed to just following the managers' best "business judgment?" When does a broker fail to engage in "honest trading" in executing customer orders? When does a manager trade on "inside information" rather than simply happen to be lucky? The interpretation of the contracts or statutes involving such terms is expensive, and requires powerful incentives to motivate an adjudicator to invest in understanding the case. Absent such incentives, courts often postpone decisions, or simply let go the potential violators of rules and contracts.

An alternative strategy is the enforcement of legal rules by regulators as opposed to judges. In our view, the crucial distinction between judges and regulators is that the latter can be more easily provided with incentives to punish violations of particular statutes.¹ Judges, in contrast, are by design more independent and therefore harder to motivate. The stronger incentives of the regulators have the benefit of bringing about more aggressive enforcement than can be achieved through courts. Yet these

1. The classic reference on the incentive of law enforcers is Becker and Stigler [1974], to whose work we return below. A recent survey of public enforcement of law by Polinsky and Shavell [2000] scarcely pays attention to the incentives of the enforcers.

incentives also have the potential cost of excessively aggressive enforcement when regulators motivated to find violations penalize innocent suspects. There is thus a trade-off between enforcement by judges facing relatively weak but unbiased incentives and enforcement by regulators facing stronger but possibly biased incentives.²

We present a theoretical model that sheds light on this trade-off, and identifies the circumstances under which enforcement by judges or regulators is preferred. The model shows that, relative to judges, regulators may be better motivated to invest in understanding the laws and circumstances of a case, but also more likely—if overmotivated—to reach politically desirable decisions at the expense of doing justice. The model also shows how reducing the costs of the investment in information by law enforcers can improve enforcement efficiency.

We then illustrate the model by comparing the regulation of securities markets through corporate and securities laws in Poland, the Czech Republic, and to a lesser extent Hungary. In these transition economies, financial regulation was designed essentially from scratch, and hence we can compare both the designs of laws and regulations and their consequences. The model bears in particular on the design of securities laws, since these laws shape the incentives of market regulators as well as the costs of information acquisition by the enforcers.

We show that, in its securities law, Poland adopted a more stringent regulatory stance than did the Czech Republic. This difference was reflected not just in the general philosophies of regulation, but in the statutes and the mechanisms of law enforcement. In contrast to the Czech Republic, Poland adopted legal rules highly protective of investors, mandated extensive information disclosure by securities issuers and intermediaries, and created an independent and highly motivated regulator to enforce the rules. We find that this approach to regulation in Poland has stimulated rapid development of securities markets, and enabled a number of firms to raise external funds. The expropriation of investors has been relatively modest. In contrast, the lax regulations in the Czech Republic, enforced by an unmotivated office in the finance ministry, have been associated with

2. Coase [1988, pp. 117–118] recognized that regulation may be preferred to judicially enforced contracts as a method of regulating some types of conduct: “There is no reason why, on occasion, such governmental regulation should not be an improvement on economic efficiency.”

security delistings and a notable absence of equity finance through a public market by either new or existing firms. Expropriation of investors has been rampant, and has acquired a new Czech-specific name, tunneling [Coffee 1996, 1998, 1999; Pistor 1999; Johnson et al. 2000b]. Starting in 1996, the Czech government tightened its regulations. Hungary adopted an intermediate regulatory stance, and has shown an intermediate level of financial development.

II. A MODEL OF ENFORCEMENT INCENTIVES

A. Basic Model

We consider a situation in which the government wishes to punish particular conduct creating negative externalities, such as nondisclosure of material information by a manager or “market manipulation” by a broker. This task is assigned to an enforcement official (an adjudicator). The question we address is whether the government wants this adjudicator to be a judge or a regulator. In the case of a judge, we focus on the inquisitorial legal system of civil law countries, where the judge must himself undertake an investigation into the facts of the situation and the law. The model we present focuses on the case where there is a legal rule or law that restricts certain conduct. The question of who should adjudicate, however, equally well applies to a situation in which two private parties such as an investor and a broker contractually agree on their conduct and have a dispute on whether this contract was followed.

Our general assumption is that the society does not have full control over the incentives facing law enforcement officials. Its ability to reward them for “enforcing the law” is limited because “doing justice” is largely unverifiable. Many of the rewards that these officials receive for doing justice are intangible, including self-esteem and the respect of one’s peers. On the other hand, the government does have the ability to politicize the enforcement of particular legal rules by rewarding the enforcers for certain outcomes such as finding violations. We are interested in the conditions under which the government would choose such politicization.

We consider an adjudicator (who can be a judge or a regulator) examining a possible violation of a legal rule. For a cost $c > 0$, this adjudicator can undertake an investigation—which for simplicity we call search—and find out for sure whether a viola-

tion had taken place. We think of c as a personal cost to the adjudicator, which includes the time he might otherwise spend working on other matters. The adjudicator has complete discretion as to whether to penalize the potential violator, and can decide to do so without searching and incurring the cost c .

The adjudicator derives a payoff of b from following the law, or doing justice, which here means punishing a violator of the rule and letting go an innocent person. We can think of b as self-esteem or long-run respect of the peers, which evidently matters to judges [Posner 1995]. We assume that, in the short run, the government cannot increase b , since it cannot verify whether the adjudicator actually searches or makes correct decisions. Training judges and building up their prestige presumably raises b , but such policies may take decades to pay off.

In addition, the adjudicator derives the payoff a from each suspect he punishes whether or not this suspect actually violated the rules. If $a = 0$, this adjudicator is only interested in justice, and is not motivated by "politics" or short-run career concerns. If $a > 0$, this adjudicator has a personal interest in finding violations. This can be so for a number of reasons. The state may be concerned with finding violators of particular rules to achieve its broader political goals, such as fighting drugs or persecuting particular ethnic minorities. More narrowly, only successful punishments of violators may be recorded by the superiors of an enforcer, and hence his future career or budget may be determined by the number of penalties he metes out. Still another important reason why adjudicators may wish to achieve certain outcomes is that these improve their career opportunities following government service [Glaeser, Kessler, and Piehl 2000]. In principle, law enforcement can be heavily politicized, and a could be a lot higher than b . We can also imagine the case where $a < 0$, which might describe regulators "captured" by the industry that they are supposed to regulate [Stigler 1971]. In this case, the analysis becomes very simple: the adjudicator will generally not find any violations. Note that, as we have set up the model, a , b , and c capture the private rather than social payoffs and costs to the adjudicator.

To complete the model, we assume that the fraction p of suspected violators of the legal rule are actually guilty, and the fraction $(1 - p)$ are innocent. The payoffs to the adjudicator and the associated probabilities are shown in Table I.

The adjudicator makes the ex ante decision of whether to

TABLE I

	Not Punish	Punish	Probability
Innocent	b	a	$1 - p$
Guilty	0	$a + b$	p

search. We refer to the strategy of letting everyone go regardless of violation as "leniency" and the strategy of punishing everyone regardless of violation as "abuse." With $b > 0$, it never pays the adjudicator to sink the cost c and then ignore the information he obtains and be either lenient or abusive. If he searches, he always punishes the violators and lets go the innocent. But before search, it may pay the adjudicator to be either lenient or abusive, depending on the magnitudes of a , b , c , and p .

To analyze the adjudicator's incentives for enforcement, we first consider his payoffs to the three strategies he can pursue: leniency, abuse, and search. These payoffs are given by

- (1) Leniency: $(1 - p)b$;
- (2) Abuse: $a + pb$;
- (3) Search: $b + pa - c$.

These payoffs define the optimal strategies of the enforcer, as summarized in

PROPOSITION 1. Fix b and p . The following strategies are followed for respective parameter values:

- Leniency: $a \leq (1 - 2p)b$ and $c \geq (a + b)p$;
- Abuse: $a \geq (1 - 2p)b$ and $c \geq (b - a)(1 - p)$;
- Search: $c \leq (a + b)p$ and $c \leq (b - a)(1 - p)$.

These conditions divide the space of parameter values into three regions, as shown in Figure I.³

The interpretation of these conditions is straightforward. For low-powered punishment incentives and high cost of search, the adjudicator chooses leniency. For high-powered punishment incentives and high cost of search, the adjudicator turns to abuse. He only searches for the truth as long as the cost of investigation is low enough that, for low a 's, he prefers search to leniency and, for high a 's, he prefers search to abuse.

Even this simple analysis in Figure I has several implica-

3. Note that if $a > b$, the only equilibrium outcome is abuse.

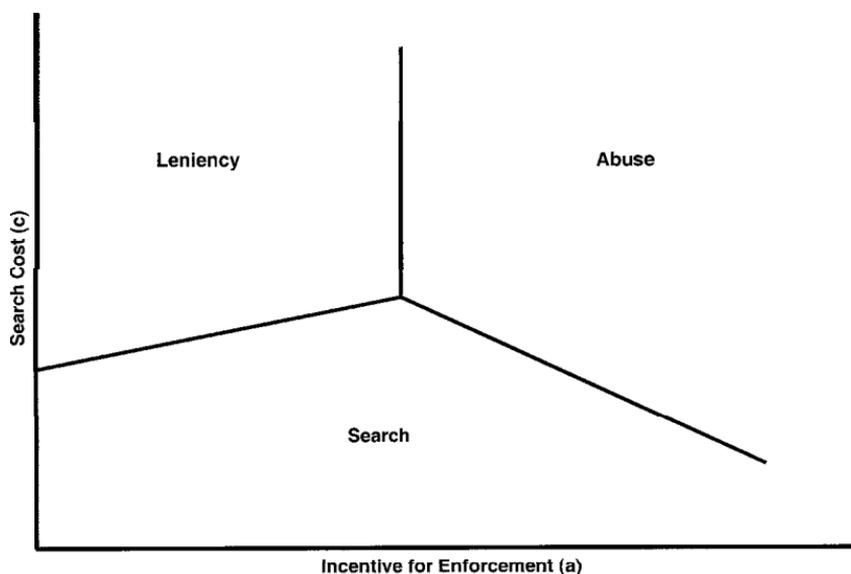


FIGURE I

A Simple Model of Incentives for Enforcement

The adjudicator's incentive for enforcement divides the space of parameter values into three regions: leniency, abuse, and search.

tions. First, we can think of c as a measure of the efficiency of the judicial system, the cost to the adjudicator of obtaining information. In principle, c can be reduced through legal and regulatory reform. In the context of financial markets, for example, c can be reduced by improving accounting systems and disclosure by issuers and intermediaries. The model implies that reductions in the level of c always lead to increases in search. For high levels of c , search may not be achievable. Increasing career or financial incentives of the enforcers only moves the system from leniency to abuse—a risk that a society may not wish to take if it prefers the former to the latter. Put differently, a relatively efficient legal system—which could potentially be designed using appropriate legal rules—is necessary for achieving just outcomes; without it, it may be better to settle for leniency.

Second, for moderate and low levels of c , increasing incentives for punishment may indeed have the effect of moving the adjudicator from leniency to search. Even here, however, significant increases in a move the adjudicator out of search and into abuse. This analysis cautions against the Becker-Stigler [1974]

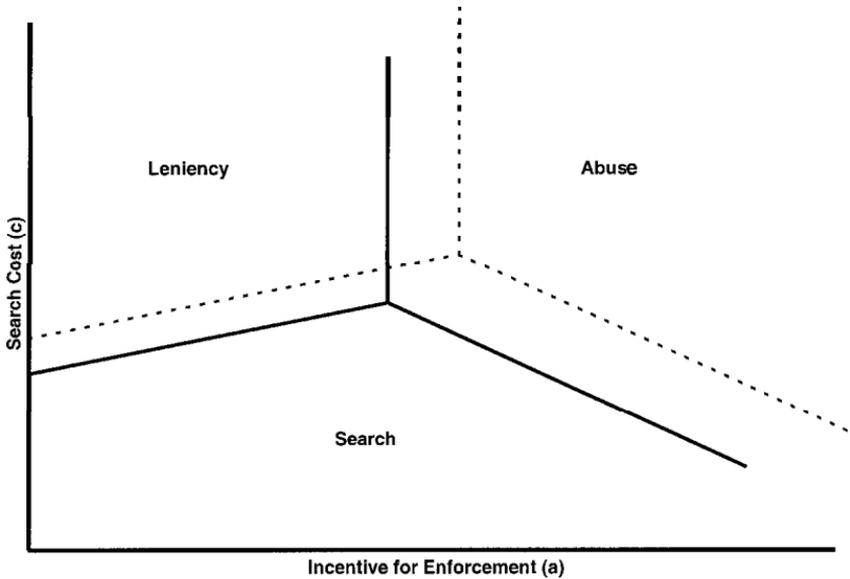


FIGURE II

Comparative Statics: Adjudicator Professionalism (b)

The adjudicator's incentive for enforcement divides the space of parameter values into three regions: leniency, abuse, and search. Increasing adjudicator professionalism (b) reduces the region of abuse.

enthusiasm for the high-powered enforcement incentives as it shows the risk for abuse, particularly in inefficient legal systems.

We can use this model to provide further comparative statics results, summarized in

PROPOSITION 2. Assume that $b > a$ and that $p < 1/2$. An increase in adjudicator professionalism, b , always 1) strictly reduces the region of abuse, 2) strictly increases the region of search, and 3) diminishes leniency for low a 's—to favor search—and expands leniency for high a 's—at the expense of abuse (Figure II). An increase in the fraction of suspects who are guilty, p , always 1) reduces the region of leniency, 2) expands the region of abuse, and 3) expands search for low a 's—at the expense of leniency and reduces it for high a 's—to favor abuse.

The intuition behind these results is straightforward. An increase in the adjudicator's concern for justice raises his aversion to both letting the guilty go (resulting from leniency) and

punishing the innocent (resulting from abuse). As a consequence, for a broader range of parameter values, he conducts a search. Since with $p < 1/2$ most suspects are innocent, a higher b makes leniency more attractive relative to abuse, further shrinking the latter region.

An increase in the guilty share of the population, p , obviously expands the range of abuse and contracts the range of search. For low incentives, the attractiveness of search rises relative to that of leniency and hence the scope of search expands. For high incentives, the attractiveness of search falls relative to that of abuse, and hence the scope of search contracts.

B. An Extension

In the basic model we assume that the fraction of violators, p , is independent of the strategy the adjudicator pursues. More generally, we expect a behavioral response by the potential violators: fewer of them would violate the legal rule if the adjudicator searches than if he is either lenient or abusive. In this subsection we briefly consider such a behavioral response.

Suppose that there are many adjudicators, so that the decisions of a particular adjudicator have no effect on the pool of potential violators. Denote by P the fraction of actual violators in the population in the equilibrium where all the adjudicators are either lenient or abusive. This P must be the same in the lenient and the abusive equilibrium, since in both cases the action of the potential violator has no effect on his fate. Denote by $Q < P$ the fraction of actual violators in the population in the equilibrium where all the adjudicators search. If breaking a rule entails costs, the likelihood of violations falls. An adjudicator chooses between leniency, abuse, and search taking the behavior of other adjudicators, and therefore P and Q , as given. In equilibrium, the choices of the adjudicators must be consistent with the choices of the potential violators.

Figure III presents the structure of equilibria in this model for different parameter values. There are now six regions. As before, the area of high search costs and low incentives, denoted by L , has leniency as the only equilibrium. The area of high search costs and high incentives, denoted by A , has abuse as the only equilibrium. The area of low search costs, denoted by S , has search as the only equilibrium. In area X , there is a unique mixed strategy equilibrium, in which the fraction of actual violators is given by $p^* = c/(a + b)$, adjudicators are indifferent between

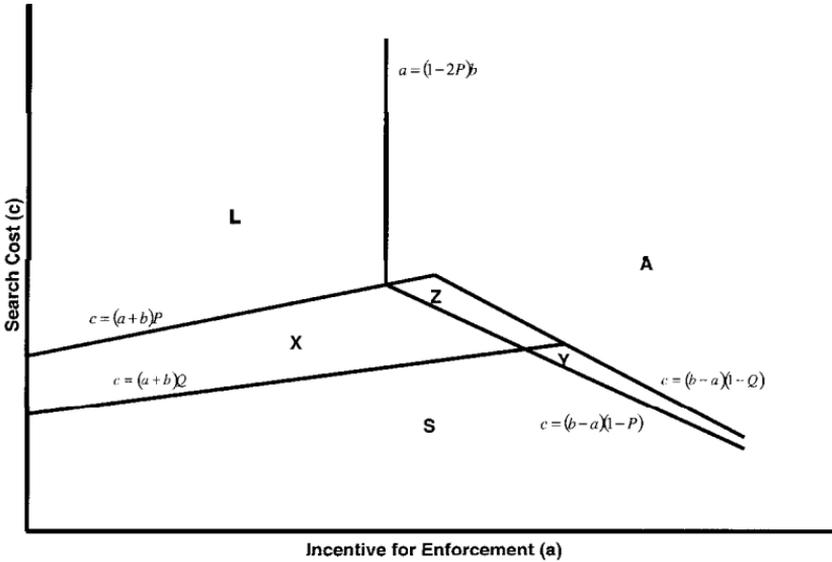


FIGURE III

Incentives for Enforcement with Behavioral Response by Potential Violators
 There are six different regions of equilibria.

search and leniency, and choose them in proportions that make p^* be the optimal response by the potential violators. In area Y, there are three equilibria, including pure search, pure abuse, and a mixture of the two with the fraction of actual violators given by $p^{**} = 1 - c/(b - a)$. The reason for multiplicity is that, starting with the mixed strategy equilibrium in this region, a decision by one adjudicator to become more abusive can increase the incentive of the potential violators to break the rule, making abuse rather than search more attractive for other adjudicators. Finally, in area Z, there are also multiple equilibria, including pure abuse.

The addition of the behavioral response introduces the possibility of multiple and mixed strategy equilibria (alternatively, different adjudicators do different things). Nonetheless, the general thrust of the results, including our principal point that providing adjudicators with incentives is desirable for moderate levels of investigation costs, is preserved.

C. Implications

What does this analysis imply for the choice of optimal enforcement incentives? To begin, we can think of $a = 0$ as the case

of "true justice," which is perhaps provided by judges truly independent of the government. We can alternatively think of high a 's as regulators or prosecutors whose careers and budgets depend not only on doing justice, but also on finding violations. One further difference between judges and regulators might be the greater specialization of the latter, leading to lower search cost c , but one can of course imagine specialized judges, as in the cases of bankruptcy or family law. The intermediate a 's may perhaps correspond to civil law judges, who are part of the civil service and hence may be dependent on the government, but who at the same time have less of an incentive to find violations than regulators do [Ramseyer and Rasmusen 1997]. Using this interpretation, the question becomes: "Who should enforce a particular legal rule?"

The model illustrates the costs and benefits of enforcement by judges and regulators. The government must choose the incentives of an enforcer, namely a (so long as career concerns are not dominated by outside opportunities), to achieve two objectives. The first is to stimulate search, as opposed to leniency, and thereby to punish the violators (this is the problem that Coasians largely ignore). The second objective is to achieve justice by not punishing the innocent (this is the problem that the advocates of government regulation usually ignore). Increasing a has the benefit of stimulating search relative to leniency, and thereby making it more likely that the violators are punished, but also the cost of increasing the likelihood of abuse—the punishment of the innocent as well as the violators without search. Put differently, turning the enforcement of a legal rule over to an apolitical judge has the benefit that the innocent would be rarely punished, but a judge—especially a judge with a low b —would also tend toward leniency. In contrast, politicizing the system and turning the enforcement to a regulator moves it away from leniency (provided that this regulator is not captured, i.e., $a > 0$), but risks abuse.

In principle, the government would wish to have judges with very high b 's—a very professional and motivated judiciary which has both sufficient incentives to investigate and a strong interest in justice. But this may not be possible. In this event, the model suggests that the best enforcement strategy—particularly when investigations are personally expensive (though not prohibitively expensive)—may be to have a regulator with a high enough a to get some search but not so high as to risk abuse. How high an a the government chooses would depend on how much it cares about punishing the violators relative to avoiding punishing the

innocent. Presumably, in the cases where punishing the innocent is particularly expensive to the society, such as criminal law, the costs of abuse are sufficiently high that most governments would still set a low and allocate adjudication to judges. In civil situations, however, the case for regulation is stronger, at least when c is moderately high. The other way of looking at this is that enforcement reforms which lower c are likely to stimulate search and lead to more efficient outcomes, regardless of whether a judge or a regulator handles the enforcement.

These predictions of the model relate to the case for securities markets regulation made by James Landis [1938], the architect of such regulation in the United States and one of the first SEC commissioners. Landis was skeptical that the courts were motivated enough to punish dishonesty in security issuance and trading in a world where the opportunities for promoters and insiders to expropriate investors were extensive. He thought that an independent and highly motivated SEC, whose only objective would be to assure the integrity of financial markets, could do this better. He also argued that using regulators as adjudicators is a better strategy because they face lower costs of investigation. Lower costs encourage search and make abuse less likely for a given level of incentives. The model can thus account for some basic intuitions for when regulation might be preferred to judicial enforcement.

In the following sections we examine the implications of the model for financial regulation in Poland and the Czech Republic (and to a lesser extent Hungary). We examine the reform in two crucial areas governing financial markets: corporate law and securities law. Corporate law deals in particular with the relationship between corporate insiders and shareholders, and is typically enforced through private litigation. Securities law regulates financial markets. As such it also deals with some aspects of shareholder protection. In addition, securities law specifies the status and the powers of the securities regulator and deals with disclosure of information by securities issuers and intermediaries. Variation in the securities laws, therefore, can be interpreted as variation in a and c in the model: a more motivated regulator would have a higher a , and greater disclosure would correspond to a lower c . We show that Poland and the Czech Republic have adopted very different strategies toward shareholder protection, especially in their securities laws, and that these strategies can be interpreted in light of the model. Our evidence suggests that

the greater success of financial development in Poland than in the Czech Republic might be related to the more appropriate regulatory stance in Poland, in line with the predictions of the theoretical analysis.

III. INITIAL CONDITIONS

In broad terms, Poland and Czechoslovakia share similar histories over the past 50 years. Both countries turned communist and became Soviet satellites shortly after World War II, and spent the next 40 years building socialism. In 1989 the two countries spearheaded the anticommunist revolution. In Poland, Solidarity won overwhelming support in the June 1989 elections, and by September 1989 was able to form a government. In Czechoslovakia the communists gave up their "leading role" in the country in the face of massive protests in November 1989, and the communist President resigned in December. Free elections in June 1990 completed a sequence of events that came to be known as "the velvet revolution."

At the beginning of reforms, Poland had a larger population of 38 million people, compared with 10.3 million in the Czech Republic. The Czech Republic in 1989 had per capita income of \$5727 in constant 1995 U. S. dollars compared with Poland's \$3045. Both countries were fully industrialized, with an industrial structure largely shaped by decades of Soviet-style central planning. Both countries border on Western Europe and in particular Germany, although Warsaw is 569 miles from Frankfurt while Prague is only 261 miles away.

Both countries initiated economic reforms immediately after shedding communism. In Poland critical legislation on liberalization was passed in the fall of 1989, and the key measures came into effect on January 1, 1990. Small-scale privatization began in May 1990, although large-scale privatization started with a whisper in 1991, ran into political obstacles, and spread over most of the 1990s. In Czechoslovakia reforms were also initiated in early 1990, with the devaluation of the currency, budget cuts, and banking reform. The formal reform package, including price increases, started on January 1, 1991. The law on large-scale privatization was adopted on February 1, 1991. Privatization through vouchers took place in two waves: in 1992 (completed in

TABLE II
COMPARISON OF ECONOMIC REFORM POLICIES BY THE EBRD

	Czech		Czech		Czech	
	Poland	Republic	Poland	Republic	Poland	Republic
	<i>Transition indicators 1997</i>		<i>Transition indicators 1996</i>		<i>Transition indicators 1995</i>	
Private sector share of GDP	65	75	60	75	60	70
Large-scale privatization	3+	4	3	4	3	4
Small-scale privatization	4+	4+	4*	4*	4*	4*
Governance and restructuring	3	3	3	3	3	3
Price liberalization	3	3	3	3	3	3
Trade and foreign exchange system	4+	4+	4*	4*	4*	4*
Competition policy	3	3	3	3	3	3
Banking reform and interest rate liberalization	3	3	3	3	3	3
Securities market and nonbank financial institutions	3+	3	3	3	3	3

Scale is from 1 (no reform) to 4+ (full reform).

Source: European Bank for Reconstruction and Development [1997, 1996, 1995].

mid-1993) and 1993 (completed in 1994). Most rules of privatization, including those on Investment Privatization Funds, were developed in 1991 [Coffee 1996].

Moreover, both countries were virtually finished with these basic reforms by 1994. They received virtually identical scores on every World Bank indicator of the pace of transition [de Melo, Denizer, and Gelb 1996]. The European Bank for Reconstruction and Development also ranked them very closely (see Table II). Although the Czech Republic moved more rapidly on large-scale privatization and so had a somewhat higher share of its GDP generated in the private sector, in matters such as small-scale privatization, governance and restructuring, price and trade liberalization, competition policy, banking reform, and financial institutions, the countries are

neck and neck and very far advanced.⁴ In short, both countries were rapid and thorough reformers in their emergence from communism, especially in comparison with other transition economies.

There are, however, two differences which we come back to below. First, the Czech large-scale voucher privatization was faster and more extensive than privatization in Poland, which over time utilized a variety of methods from direct sales to share transfers to mutual funds. As a consequence, the number of publicly held companies in the early 1990s was significantly higher in the Czech Republic than in Poland. Second, during this period Poland grew faster but also had higher inflation than the Czech Republic. The assessments of growth rates depend on exactly how they are calculated. The level of GDP in Poland in 1997 stood at 110 relative to 100 in 1989, whereas in the Czech Republic it stood only at 90. Using constant 1995 dollars, however, Poland's advantage is smaller.⁵ During 1992–1997 the Czech inflation averaged 13.9 percent per annum, while Polish inflation was significantly higher at 26.5 percent.

In legal development, the two countries again appear similar. In the universe of transition economies, both get perfect or nearly perfect scores, although these scores have only been kept after 1995. The European Bank for Reconstruction and Development evaluates transition economies on the extensiveness of laws (since 1996), effectiveness of laws (since 1996), and overall legal development (since 1995). Table III, Panel A, presents the scores for Poland and the Czech Republic, which again are close to each other and as high as those of any transition economy.⁶ The legal systems of the two countries, however, lagged behind those of rich market economies. Freedom House generates an index of "equality of citizens under the law and access of citizens to a non-discriminatory judiciary." In 1995–1996 both Poland and the

4. In 1997 the EBRD gave Poland a 3+ relative to the Czech Republic's 3 on securities markets and financial institutions. We argue below that the difference should have been larger.

5. The World Bank reports the level of real GDP using constant 1995 prices but calculates growth rates using the GDP deflator. Given the large changes in relative prices during reforms, it is hard to know which measure is better. On every available measure, however, Poland has had more growth since 1989, and grew significantly faster during the 1995–1998 period.

6. Pistor [1995] assesses the extent of legal development in a number of transition economies. She gives Poland and the Czech Republic the same score, the highest (shared with Hungary) among all the transition economies she studies.

TABLE III
LEGAL ENVIRONMENT

Panel A	Czech		Czech		Czech		Czech	
	Poland	Republic	Poland	Republic	Poland	Republic	Poland	Republic
<i>EBRD</i>			1997		1996		1995	
Extensiveness of laws			4	4	4*	4	n.a.	n.a.
Effectiveness of laws			4+	4	3	4*	n.a.	n.a.
Overall			4	4	4	4	4	4
Panel B								
<i>Wall Street Journal CEER survey</i>	<i>December 1997– January 1998</i>	<i>December 1996– January 1997</i>	<i>December 1995– January 1996</i>	<i>December 1995– January 1996</i>	<i>December 1995– January 1996</i>	<i>December 1995– January 1996</i>	<i>February 1995</i>	<i>February 1995</i>
Rule of law/legal safeguards	9	8.7	9	8.8	9.1	9.1	n.a.	n.a.
Legal framework							9.8	9.8

Scale for legal extensiveness and legal effectiveness is from 1 (no reform) to 5 (full reform).

Scale for rule for law/legal safeguards, and legal framework is from 1 to 10 (the highest/best score).

Source: European Bank for Reconstruction and Development [1997, 1996, 1995], and *Central European Economic Review*, a supplement of the *Wall Street Journal Europe* (issues indicated in table).

Czech Republic received scores of 5 out of 10, compared with 7.5 or 10 for the rich industrial countries.⁷ The 1997 World Competitiveness Yearbook [IMD 1997] in its question on the legal framework, gave Poland 4.16 out of 9 and the Czech Republic 4.66. This compares with 8.46 for the world leader, Singapore (and over eight generally for rich industrial countries) and the low of 2.35 for Venezuela. Finally, the 1996 Global Competitiveness Report [World Economic Forum 1996], in its question on confidence in the fair administration of justice, gives 2.93 out of 6 to the Czech Republic and 2.92 to Poland. This compares with the high of 5.78 for New Zealand, and the low of 1.77 for Russia. All the surveys, then, treat the judicial systems of the two countries as about equally advanced, ahead of world laggards yet far behind the rich industrial countries.

These results are echoed by the concerns of knowledgeable observers about the state of the judicial system in the two countries in the early stages of reform [Gray et al. 1993]. With respect

7. These numbers come from Economic Freedom of the World 1997, by James Gwartney and Robert Lawson, a publication of The Fraser Institute, a conservative think tank in Canada.

to Poland, Gray et al. [p. 109] write: "Many of the newly appointed judges lack experience. . . . Developing such expertise will take time. Lack of experience and expertise creates uncertainty in the business population . . ." With respect to the Czech Republic, Gray et al. [p. 59] note: "As in other Central and East European countries, judicial institutions in the Czech Republic are ill prepared to cope with the rapidly emerging challenges of the market economy . . . Incapacity in the court system is likely to be a constraint for some time to come."

In summary, the economies and the economic policies of Poland and the Czech Republic share some remarkable similarities during the 1990s. The two countries emerged from socialism with a need to massively reorganize their economies and proceeded to do so both rapidly and effectively. In many crucial respects, they followed similar policies toward this goal, and achieved similar results, especially compared with other, less successful, transition economies.

IV. COMPANY LAW

Recent research shows that investor protection through company laws and commercial codes is an important deterrent of expropriation of outside investors, and as such a key determinant of the development of securities markets across countries [La Porta et al. 1997, 1998, 1999, 2000; Johnson et al. 2000a]. Before focusing on securities regulations, therefore, it is important to compare Poland and the Czech Republic along this dimension.⁸

La Porta et al. [LLSV 1998] propose six dimensions to evaluate how well a commercial code (or company law) protects minority shareholders against expropriation by the insiders, and combine them into an index of shareholder protection. Table IV, Panel A, presents and explains this index and its components for Poland and the Czech Republic, based on their first postreform

8. Poland's law dates back to the code of 1934, which was modified repeatedly through the communist era and in the early 1990s. The Polish commercial code has both German and French influences [Gray et al. 1993; Pistor 1999]. Although the Czech Republic also had a commercial code from the 1930s, its laws were "more thoroughly abrogated" than those of Poland during communism, and it accordingly adopted a new commercial code on January 1, 1992 [Gray et al. 1993]. The principal influence on the Czech commercial code was German. In this and the following sections, we examined the laws adopted in the early 1990s, which are relevant for financial development during the 1990s. Toward the end of the decade, the laws have been revised in both countries, particularly in the Czech Republic.

TABLE IV
COMPARISON OF LLSV DIMENSIONS
SHAREHOLDER RIGHTS FROM COMMERCIAL CODES

	Panel A					
	Poland	Comment	LLSV score	Czech	Comment	LLSV score
Proxy-by-mail	No	Article 405 (proxy in person is allowed)	0	No	Article 185	0
Shares blocked before general meeting of shareholders	Yes	Article 399 (one week ahead of meeting)	0	Yes	(one week ahead of meeting)	0
Oppressed minority mechanism	Yes	Articles 409 and 414	1	Yes	Can protest decision of general assembly	1
Shareholders have preemptive right to new issues	No	Not mentioned in Polish law	0	No	Can be excluded by Articles of Association (Article 204(2))	0
Percent of votes needed to call extraordinary general meeting	10%	Article 394	1	10%	Article 181	1
Cumulative voting	Yes	Article 379 A combination of shareholders with at least 20% of the share capital can elect a board member	1	No	Articles 186 and 200 51% of the votes is enough to appoint all the directors. $\frac{1}{3}$ of seats go to employees if at least 500 workers	0
“Anti-Director Rights” index, calculated as in LLSV			3			2

Definitions used in Panel A
(from LLSV [1998]):

One share-one vote	Equals one if the company law or commercial code of the country requires that ordinary shares carry one vote per share, and zero otherwise. Equivalently, this variable equals one when the law prohibits the existence of both multiple-voting and nonvoting ordinary shares and does not allow setting maximum number of votes per shareholder irrespective of the number firms of shares owned, and zero otherwise.
Proxy by mail allowed	Equals one if the company law or commercial code allows shareholders to mail their proxy vote to the firm, and zero otherwise.
Shares not blocked before meeting	Equals one if the company law or commercial code does not allow firms to require that shareholders deposit their shares prior to a general shareholders meeting, thus preventing them from selling those shares for a number of days, and zero otherwise.
Cumulative voting or proportional representation	Equals one if the company law or commercial code allows shareholders to cast all their votes for one candidate standing for election to the board of directors (cumulative voting) or if the company law or commercial code allows a mechanism of proportional representation in the board by which minority interests may name a proportional number of directors to the board, and zero otherwise.
Oppressed minorities mechanism	Equals one if the company law or commercial code grants minority shareholders either a judicial venue to challenge the decisions of management or of the assembly or the right to step out of the company by requiring the company to purchase their shares when they object to certain fundamental changes, such as mergers, asset dispositions, and changes in the articles of incorporation. The variable equals zero otherwise. Minority shareholders are defined as those shareholders who own 10 percent of share capital or less.
Preemptive rights	Equals one when the company law or commercial code grants shareholders the first opportunity to buy new issues of stock, and this right can be waived only by a shareholders' vote; equals zero otherwise.
Percentage of share capital to call an extraordinary shareholders' meeting	The minimum percentage of ownership of share capital that entitles a shareholder to call for an extraordinary shareholders' meeting; it ranges from 1 to 33 percent.

commercial codes. Neither country allows proxy-by-mail (score zero), each requires that shares be blocked before the annual meeting of shareholders (score zero), and neither gives shareholders a preemptive right to new share issues (score zero). They each require 10 percent of the votes to call an extraordinary shareholder meeting (score 1), and each provide the minority shareholders with some opportunities to protest certain majority decisions (score 1). The two laws differ in one important dimension using this classification: the Polish law allows a significant (20 percent and in some cases less) minority shareholder to elect a director. Under the Czech law, 51 percent of the votes are enough to appoint all directors. Overall, Poland ends up with a score of 3 out of 6 on anti-director rights, and the Czech Republic with a score of 2.

To put these scores in perspective, the highest actual shareholder rights score in the LLSV [1998] sample of 49 countries is 5. Several common law countries, such as the United States, the United Kingdom, and Canada receive this score. Belgium is the lowest in the sample, with a score of 0, but several countries including Italy, Jordan, and Mexico get a score of 1. The average in the sample is 3. Thus, Poland is average in the world in protecting shareholder rights through the company law, while the Czech Republic is below the average.

Some additional rules in the commercial codes, not studied by LLSV [1998], are also more protective of minority shareholders in Poland (Table IV, Panel B). Poland gives important rights to significant minority shareholders (those with either 20 percent of the votes or 20 percent of share capital). In Poland, but not in the Czech Republic, this group can demand the appointment of an additional board of auditors, and not just a seat on the supervisory board. This group can also check who attended the general shareholders' meeting, thus keeping the management from manipulating the total number of the available votes. Both countries generally require supermajorities for important decisions, such as the change in the objectives of the company. Poland grants a shorter term in office to directors (three years) than does the Czech Republic (five years). In one interesting regard, the Czech law is more protective of minority shareholders. Article 185 of the Czech 1992 Commercial Code requires that a quorum of 30 percent of the total possible votes be present at a general meeting of shareholders. The Polish Commercial Code does not set any such quorum (Article 401).

TABLE IV
(CONTINUED)

	Panel B			
	Poland		Czech Republic	
Further rights of shareholders "One share-one vote" (for ordinary shares) and no limits on votes per shareholder	No	Art. 404: can limit votes of large shareholders	No	Can set max votes per shareholder (Article 180)
Supervisory board and management board both elected by shareholders' meeting	Yes	Articles 377 and 366	Yes	Articles 194 and 200
Shareholders representing at least one-fifth of shares can demand an additional board of auditors	Yes	Article 377(3)	No	Not mentioned in Czech law
Shareholders with 10% of share capital represented at general meeting can check the list of attendance	Yes	Article 403	No	Article 185
Two-thirds majority of general assembly or votes cast needed for large purchases (over one-fifth of share capital) within two years of registration of company	Yes	Article 389	No	Not mentioned in Czech law
Two-thirds majority of general assembly or votes cast needed to change articles of association or objects of company	Yes	Article 409 each share has one vote without preferences or restrictions	Yes	Article 187
Term of board of directors (management board)	3 years	Article 366 and 381	5 years	Article 194
Bearer shares allowed	Yes	Article 345	Yes	Article 155 and 156
Preference shares allowed (possibly without voting rights)	Yes	Article 357	Yes	Article 159
Quorum of votes needed to be present	None	Article 401	30%	Article 185

In summary, Poland's company law is somewhat more protective of minority shareholders than the Czech law. These differences in themselves, however, do not appear to be significant enough to account for the differences in financial development documented below.

V. SECURITIES LAW AND REGULATION

Despite the many crucial similarities, the two countries followed different approaches to reform in terms of the government's interest in regulatory intervention. This difference did not escape the early observers of the two countries, who viewed Czech economic policy as more *laissez-faire* than Polish economic policy. For example, in each of the three years 1994–1996, the conservative Heritage Foundation gave the Czech Republic a perfect (from its perspective) score of 1 and Poland a mediocre score of 3 on its measure of “regulation”—the extent to which government restricts economic activity. Along similar lines, Euromoney considered Poland to be riskier for foreign investment and lending than the Czech Republic, in part because property rights were less secure from government intervention.

These observers had every right to form such opinions based on the pronouncements about markets and market reform coming from economic officials in the two countries. Vaclav Klaus, the Czech Finance Minister and later Prime Minister, was both tremendously articulate and unabashedly antigovernment in his vision of reforms: “We knew that we had to liberalize, deregulate, privatize at a very early stage of the transformation process, even if we might be confronted with rather weak and, therefore, not fully efficient markets . . . Conceptually it was—at least for me—rather simple: all you had to do was to apply the economic philosophy of the University of Chicago [Klaus 1997, from a 1995 speech].” Leszek Balcerowicz, the champion of Polish reforms, was more cautious: “The capacity of the state to deal with various problems varies, mainly because of varying informational requirements. On this basis, one can distinguish on the one hand, the sphere of the state's natural competence (legislating and enforcing the law, dealing with other states, for example) and, on the other hand, its sphere of natural incompetence (a massive and detailed industrial policy, for example) [1995, p. 176].”

These differences revealed themselves most clearly in the regulation of capital markets. The Polish “Law of Public Trading

in Securities and Trust Funds” was adopted on March 22, 1991, and became effective in early April 1991. The Czech “Securities Act” was adopted in 1992, and became effective on January 1, 1993. Although this Act was passed after privatization had started, financial institutions, such as Investment Privatization Funds (IPFs), apparently did not lobby for or against it. In fact, the Czech rules were established before privatization started and before the IPFs existed, and only codified later [Coffee 1996]. They were a product of the government’s economic philosophy, not lobbying.

In our analysis of securities laws, we focus especially on two issues. First, we show that there were significant differences in the institutions of securities regulation in the two countries, particularly with respect to the independence and the power of securities regulators. We interpret the greater independence and power of the regulator as an increase in the parameter a in the model: the incentives of the adjudicator. Second, we show that the issuers and the intermediaries in the two countries faced radically different disclosure requirements, so that the regulators had very different access to information. We interpret the greater mandatory disclosure, and the use of intermediaries to enforce it as reductions in the parameter c in the model: the cost of search.

From this perspective on regulation, an examination of securities laws in Poland and the Czech Republic reveals profound differences. To begin, the two laws differed in the identity of the government body supervising securities markets. In Poland it was an independent Securities Commission. In the Czech Republic such a commission was not established initially, and markets were supervised by the Capital Markets Supervisors Office of the Ministry of Finance. The Ministry of Finance during this period was first under Klaus, and later, when he became Prime Minister, remained indifferent to regulating securities markets. Both supervisory bodies received the power to generate regulations, to issue and revoke licenses, and to impose fines for violations of security laws and regulations, but had to refer criminal cases to the public prosecutor. The criminal channel was scarcely used in either country. The fact that the Polish Securities Commission was independent, and charged solely with supervision of securities markets, is likely to have provided it with greater incentives to find violations than those faced by the Czech Ministry of Finance, with its much broader agenda.

A key difference in the structure of securities laws in the two

countries is in the emphasis on the regulation of intermediaries. The idea of focusing the regulation of securities markets on intermediaries is sometimes credited to James Landis [Landis 1938; McCraw 1984], who reasoned that the U. S. SEC could monitor neither the compliance with disclosure, reporting, and other rules by all listed firms, nor the trading practices of all market participants. Rather, the SEC would regulate intermediaries, such as brokers, accounting firms, investment advisors, etc., placing on them the burden of assuring compliance with regulatory requirements by issuers and traders. By maintaining substantial administrative power over the intermediaries, including the power to issue and revoke licenses, the Commission could force them to monitor market participants. Moreover, the intermediaries would be relatively few in number, and more concerned with their own reputations with the SEC compared with most of the issuers. By privatizing part of the enforcement of disclosure to the intermediaries, the regulator could reduce the share of the enforcement costs he had to bear himself—a reduction in c in our model.

Table V compares the two laws from the perspective of the regulation of financial intermediaries. In the regulation of individual brokers, Poland instituted relatively elaborate licensing requirements, accompanied by tests. Brokers were supposed to engage in “honest trading” as interpreted by the Commission, and could lose their license. The Czech Republic had much more pro forma licensing of brokers, with easy exams, no warning concerning “honest trading” and evidently no real power of the Commission to revoke licenses. The Polish Commission used the broad “honest trading” requirement, and its own power to interpret it, to discourage brokers’ practices that might not have served the interests of clients.

Brokerage firms were also licensed in both countries but faced considerably stiffer regulations in Poland. For example, the regulator received the right to access and inspect the books of brokerage firms, and these firms had to disclose their ownership structure, stay away from trading in the securities issued by a parent or a subsidiary company, and retain organizational and financial separateness from banks which owned some of them. These regulations did not exist in the Czech Republic. It is clear that the Czech Republic adopted a very hands-off stance toward brokers and brokerage firms, in contrast to Poland.

The Czech Securities law contained no regulation of invest-

TABLE V
REGULATION OF INTERMEDIARIES

	Poland		Czech Republic	
	Individual brokers			
Licensed by securities market regulator	Yes	Articles 18.2 and 14.1	Yes	Section 49
Must pass exam administered by securities market regulator	Yes	Article 14.1(4)	No	Section 49
Required to engage in "honest trading" and act in the interest of clients	Yes	Article 17.1	No	Section 49
License can be suspended or revoked by Securities Commission	Yes	Article 16.2 and 16.3	Yes	Section 49
	Brokerage enterprises			
Licensed by securities market regulator	Yes	Article 18.2	Yes	Section 45
Securities market regulator has right of access and inspection	Yes	Article 26	No	Sections 45–48
License can be suspended or revoked by securities market regulator	Yes	Article 25.3	Yes	Section 48(2)
Required to engage in "honest trading" and act in the interest of clients	Yes	Article 25.2(3)	No	Sections 45–48
Must not conduct other business with the same name	Yes	Article 18.6	No	Sections 45–48
Must report who has more than 5 percent of voting rights at general meeting of shareholders	Yes	Article 23.2	No	Sections 45–48
Must report any change of voting rights for one person above 2 percent	Yes	Article 23.3	No	Sections 45–48
Bank engaged in brokerage operations must have organizational and financial separateness of department for public trading in securities	Yes	Article 24	No	Sections 45–48
Must not trade securities issued by parent or subsidiary company	Yes	Article 31	No	Sections 45–48

TABLE V
(CONTINUED)

	Poland		Czech Republic	
Investment advisers (firms engaged in advisory activity in the field of public trading)				
Licensed by securities market regulator	Yes	Article 33	No	Not mentioned in the Czech law
Must pass exam set by securities market regulator	Yes	Article 33.3	No	Not mentioned in the Czech law
Securities market regulator has right of access and inspection	Yes	Article 33	No	Not mentioned in the Czech law
License can be suspended or revoked by securities market regulator	Yes	Article 33	No	Not mentioned in the Czech law
Required to engage in "honest trading" and act in the interest of clients	Yes	Article 33	No	Not mentioned in the Czech law
Must not conduct other business with the same name	Yes	Article 33	No	Not mentioned in the Czech law
Must report who has more than 5 percent of voting rights at general meeting of shareholders	Yes	Article 33	No	Not mentioned in the Czech law
Must report any change of voting rights for one person above 2 percent	Yes	Article 33	No	Not mentioned in the Czech law
Bank engaged in investment advisory operations must have organizational and financial separateness of department for public trading in securities	Yes	Article 33	No	Not mentioned in the Czech law
Must not trade securities issued by parent or subsidiary company	Yes	Article 33	No	Not mentioned in the Czech law

Sources: Poland: Act of Trading in Securities and Trust Funds, 1991; Czech: Securities Act 1992.

TABLE V
(CONTINUED)

	Poland			Czech
Stock markets				
Trading must take place on a stock exchange	Yes	Article 54.1	No	Section 50 of the Securities Law
Securities regulator controls stock exchange rules	Yes		No	Not mentioned in Czech law
Securities exchange should ensure a uniform market	Yes	Article 57(1)	No	Not mentioned in Czech law
Securities exchange should ensure dissemination of uniform information on the value of securities	Yes	Article 57(3)	No	Not mentioned in Czech law
Agreements among any groups to artificially raise or lower the price of securities are prohibited	Yes	Article 64.3	No	Not mentioned in Czech law
Mutual funds				
Mutual funds may be administered solely by mutual fund companies	Yes	Article 89.2	No	Not mentioned in Czech law
Mutual fund companies are licensed by securities regulator	Yes	Article 89	Yes	Section 8
Mutual fund company can be dissolved by securities regulator	Yes	Article 98	Yes	Section 37
Mutual fund companies must be joint stock companies	Yes	Article 90.1	No	Section 2
Only registered shares are allowed in mutual fund companies (no bearer shares)	Yes	Article 92.2	No	Not mentioned in Czech law
Closed-end funds are allowed	No	Article 104	Yes	
Founder limited to 10% of share capital	Yes	Article 93(1)	No	Not mentioned in Czech law
Founder not allowed to be on Management Board	Yes	Article 93(1)	No	Not mentioned in Czech law
Publicly traded securities or government obligations	Yes	Article 107	No	Section 17

TABLE V
(CONTINUED)

	Poland		Czech	
No more than 5% of the funds assets can be in securities issued by one issuer	Yes	Article 108	No	Section 17
Custodian banks (for mutual funds)				
All fund assets must be entrusted to a trustee bank	Yes	Article 112.1	Yes	Section 31
Trustee bank must make sure that sale and retirement of participation units in the fund are consonant with the law and house rules of the fund	Yes	Article 112.2(2)	No	Not mentioned in Czech law
Trustee bank must compute the net worth of the fund's assets	Yes	Article 112.2(3)	No	Not mentioned in Czech law
Trustee bank must not execute instructions that are in conflict with the law or house rules of the fund	Yes	Article 112.2(4)	No	Not mentioned in Czech law
Trustee bank must make sure income of the fund is made public	Yes	Article 112.2(6)	No	Not mentioned in Czech law
Trustee bank may not be a founder of the mutual fund company, or a buyer of its securities, or the administrator of the company	Yes	Article 113.1	No	Not mentioned in Czech law
Mutual fund company may not buy securities issued by the trustee bank or a related company	Yes	Article 113.2	No	Not mentioned in Czech law

Source: Polish Act of Trading in Securities and Trust Funds, 1991; Czech Investment Companies and Investment Funds Act April 1992 and Stock Exchange Act 1992.

ment advisors; the Polish law contained substantial regulations, including licensing. The Polish law restricted trading to take place on a stock exchange, and regulated these exchanges to

ensure some transparency in trading. The Czech law did not include such regulations. The Polish law contained detailed regulations of mutual funds, and in fact for several years the entry into this activity was severely limited. The Czech law took a much more lenient approach again. Finally, the Polish law contained stringent regulations of custodian banks, which are an important checkpoint for changes in ownership that might facilitate tunneling. The Czech law again was less restrictive.

Finally, the Polish Securities law, to a much greater extent than the Czech law, established administrative procedures enabling the securities market regulator to discipline the intermediaries without recourse to the judicial system. The intermediaries could then appeal the decisions of the regulator to administrative courts, but then they, rather than the regulator, had to face the delays and the inefficiency of the judicial system. Because the judiciary in neither country is corrupt, the regulators had little fear of their lawful decisions being overturned.

Table VI compares the two original laws from the perspective of the regulation of security issuers, especially in the area of disclosure. Recall that greater disclosure of financial information can serve to reduce the cost of information acquisition by a regulator or a judge. In Poland the introduction of securities to public trading required both permission of the regulator and a prospectus. The Czech law required neither. The Polish law required monthly, quarterly, semiannual, and annual reporting of financial information; the Czech law only the annual results. The Polish law required disclosure of all material information; the Czech law only that of significant adverse developments.

Financial results are one area where disclosure may be important; ownership structure is another. The Polish law required disclosure of substantial minority shareholdings; the Czech law did not. Indeed, under the original Polish law, a shareholder crossing 10, 20, 33, 50, 66, and 75 percent ownership stakes had to publicly disclose his ownership. The lack of disclosure of minority shareholdings has been seen as a problem in several West European countries, since it enables anonymous large shareholders to collude with management and expropriate minority shareholders [European Corporate Governance Network 1997]. Finally, the original Polish law also required a mandatory bid for the remaining shares when a 50 percent ownership threshold was reached; the Czech law did not. Such mandatory bids, combined with disclosure of ownership, are intended to prevent the expropriation of minority

TABLE VI
REGULATION OF LISTED COMPANIES

	Poland	Czech Republic
	Regulation of listed companies	
Introduction of securities into public trading requires permission of the securities regulator	Yes Article 49	No Not mentioned in Czech law
Introduction of securities into public trading requires a prospectus	Yes Article 50.2	No Not mentioned in Czech law
False statement in prospectus is forbidden	Yes Article 118	Yes Section 79
Monthly reporting of financial information	Yes Reg. of Sec. Comm. and Stock Exchange	No Not mentioned in Czech law
Quarterly reporting of financial information	Yes Reg. of Sec. Comm. and Stock Exchange	No Not mentioned in Czech law
Semiannual reporting of financial information	Yes Reg. of Sec. Comm. and Stock Exchange	No Not mentioned in Czech law
Annual reporting of financial information	Yes Reg. of Sec. Comm. and Stock Exchange	Yes Section 80
Obligation to publish all material information	Yes Reg. of Sec. Comm. and Stock Exchange	No Section 80 just significant adverse developments
	Constraints on purchasers/potential controlling shareholders	
Transparency of ownership requirement	Yes	No Centre for Securities can change ownership without disclosure
Threshold at which must declare stake (percent)	Yes Article 72	None
10	Yes	No Not mentioned in Czech law
20	Yes	No Not mentioned in Czech law
33	Yes	No Not mentioned in Czech law
50	Yes	No Not mentioned in Czech law
66	Yes	No Not mentioned in Czech law
75	Yes	No Not mentioned in Czech law

Form of disclosure required to Securities Commission To Anti-Monopoly Office	Yes Yes	No No	Not mentioned in Czech law Not mentioned in Czech law
To company	Yes	No	Not mentioned in Czech law
Company must announce who owns more than 10%	Yes	No	Not mentioned in Czech law
	Threshold at which must make general offer		
Must make offer if intend to pass specified threshold for ownership stake	Yes	No	Not mentioned in Czech law
	Any person who intends to acquire shares in one company, once or by way of repeated transactions, becoming within 12 months the holder of shares in an amount that guarantees him reaching or surpassing 33 percent of votes at the general meeting, shall be obliged to do solely by way of public invitation to subscribe for the sale or the exchange or shares . . . (Article 73)		
Must make offer if actual ownership stake passes specified threshold	Yes	No	Not mentioned in Czech law
	Any person who has become a holder of shares in one company representing over 50 percent of the votes at the general meeting, shall be obliged, prior to exercising any powers resulting from the right to vote, to announce an invitation to subscribe for the sale or exchange of the remaining shares in that company (Article 87).		

TABLE VI
(CONTINUED)

	Poland	Czech Republic
	Tender offer rules	
Not allowed to hide behind a related company	Yes	No
Transactions in share on the stock exchange should be suspended	Yes	No
Time limit for subscribing	Yes	No
Must buy all the shares offered	Yes	No
Specified price for purchase	Yes	No
	Cannot hide behind "dependent subject" (Article 72(2), Article 73(2))	Not mentioned in Czech law
	All transactions in this share on the stock exchange should be suspended	Not mentioned in Czech law
	25 days	Not mentioned in Czech law
	... the Commission may forbid the announcing of the invitation if ... the price offered in the invitation is lower by 10 percent than the average market price during 3 months immediately preceding the announcement of the invitation.	Not mentioned in Czech law
	(Article 74)	
	The price offered ... cannot be lower than the highest price paid thereby for the shares in the last 12 months, or where no such price was paid—the average market price in the last 30 days before the announcement of the invitation. The price shall also be regarded as the value of things or rights intended to be given by the inviting person in exchange for shares	
Conditions under which can "go private" Securities Commission must approve	Yes	Not specified

Sources: Polish and Czech Securities Laws.

shareholders in tender offers, since they force an acquirer to buy out minority shareholders when he gains control.

This evidence shows that Poland chose to regulate its securities markets more stringently than the Czech Republic. In line with the model, its law provided for extensive disclosure of financial and ownership information, a way to reduce c and thus to facilitate regulation (as well as private governance). The Polish reliance on financial intermediaries to ensure financial disclosure can also be seen as a reduction in c . Also in line with the model, Poland relied on administrative control over markets by a motivated securities regulator, an increase in α relative to judicial enforcement. This could, in principle, motivate the regulators to become informed and reduce the likelihood of leniency. We next consider whether this approach worked.

VI. OUTCOMES

A. *Qualitative Assessments*

Stable prices, rapid privatization, and openness to the West combined to generate favorable initial assessments of the Czech economic reforms. By 1996, however, there was mounting evidence of systematic expropriation of minority shareholders by Investment Privatization Funds and company insiders colluding with them. Coffee [1996], who first presented his paper in 1994, drew attention to such expropriation—which came to be known as tunneling. In a typical scheme, the managers of an IPF holding a large stake in a privatized company would agree with the managers of this company to create a new (possibly off-shore) entity, which they would jointly control. The IPF might then sell its shares in the company to this entity at below market price, thereby expropriating the shareholders of the IPF. The company could also sell some of its assets or its output to the new entity, again at below fair value, thereby expropriating its own minority shareholders. These arrangements between corporate managers and their large shareholders (IPFs) enriched them at the expense of minority investors in both the firms and the IPFs (see Coffee [1996, 1998] for a discussion of tunneling in the Czech Republic).

The laxity of the securities law accommodated tunneling. First, since transactions did not need to take place on an exchange, large blocks of shares could change hands off the exchange at less than the prevailing market price. Even on an

exchange, there was no guarantee of price uniformity. Moreover, brokers and brokerage firms had no restrictions on facilitating such transactions, nor did the custodian banks have any regulatory duty to stop them. Second, since there was no requirement of ownership disclosure, the acquirers of large blocks could remain secret. Third, without a mandatory bid, these acquirers had no obligation to buy out the remaining minority shareholders. Fourth, the IPFs appear to have been under no restrictions in pursuing such transactions, since their management did not owe any clearly regulated duty to their investors let alone to the minority shareholders of the companies they tunneled. Fifth, there was no reason to disclose any financial transactions between the new owner of shares and the company, since such transactions were generally allowed and did not need to be disclosed except perhaps in the annual report several months later. Finally, the minority shareholders had virtually no legal recourse in stopping such expropriation except in a very few cases when the oppressed minority mechanism came into play, and even substantial minority shareholders could not elect their own directors to represent their interests.

During the mid-1990s, the heyday of tunneling in the Czech Republic, the regulators did very little to stop it. Part of the problem was the weakness of the laws. But equally important was probably the lack of interest of securities regulators combined with judicial ineffectiveness.

By 1996, it became widely believed that something had gone wrong with the regulation of the Czech financial markets. In March 1996 the *Central European Economic Review*, a publication of the *Wall Street Journal*, surveyed assorted brokerages and fund managers on corporate governance in four transition economies. The survey asked respondents to comment on the disclosure of large shareholdings, transparency of markets, quality of reporting, protection of small shareholders, and insider trading. The Polish market came out as the best of the four, followed by the Hungarian market. The Czech market came third, ahead of the Russian market, which received the lowest score on every dimension. The Polish market outscored the Czech market on every dimension, with large spreads on the disclosure of ownership and transparency. Consistent with this general assessment, the International Federation of Stock Exchanges admitted the Warsaw Exchange as a full member as early as 1994 on the grounds that the regulation of securities markets met its stan-

dards. As of this writing, the Prague Stock Exchange still had not been admitted even as an associate member.

Financial scandals in Poland were typically less egregious than those in the Czech Republic, and often invited an aggressive regulatory response. The best known Polish scandal involves a failure of a large conglomerate, Elektrim, to reveal in a prospectus an existing agreement to sell some shares in a valuable subsidiary to a third party at below market price (allegedly as a payment for services). When the agreement came to light, Elektrim's shareholders complained, and the Securities Commission quickly referred the case to a public prosecutor. The top manager of Elektrim was forced to step down. The Elektrim case illustrates the crucial interaction between the corporate and securities law in the enforcement of investor rights. The failure by the company to disclose possibly material information in a prospectus was the source of the Commission's investigation under the securities law. This failed disclosure also brought about an effort by the outside shareholders to change the board of directors using the commercial code, which ultimately brought down the top manager. This interplay between the securities law and the company law appears in other countries as well: the securities law forces disclosure, which in turn invites shareholder activism using the provisions of company law.

The Polish regulator has also been aggressive in its administrative oversight of the intermediaries. In 1994 Bank Slaski, one of the largest Polish banks which owned the largest broker at the time, was privatized. In response to the evidence that the brokerage arm of the bank favored the insiders in allocating shares in this privatization, the regulators took away its brokerage license. This was done against opposition from the Ministry of Finance.

The available evidence shows that the Polish regulators relied on the actual legal rules to protect investors; it was not just their ideology that made a difference. In the cases we examined, they relied on specific rules to promote disclosure that did not exist in the Czech law, consistent with the view that reductions in c matter. The Polish regulator was also evidently motivated to police the market aggressively, consistent with the view that a level of a above that of the judges may be beneficial. Importantly (and in line with the model), the Polish regulator also had the power, and not just the motivation, to punish the violations of rules.

TABLE VII
STOCK MARKET SIZE IN POLAND AND THE CZECH REPUBLIC

Market capitalization		Market Cap/GDP		Number of issues listed							
Czech Republic		Czech Republic		Poland			Czech Republic				
US \$m, end of year				<i>End of year</i>			<i>End of year</i>				
				Main market	Parallel market	Total	Main market	Second market	Free market	Total	
1991	144		0.19%	9	0	9					
1992	222		0.26%	16	0	16					
1993	2706		3.15%	22	0	22	3	0	966	969	
1994	3057	5938	3.30%	14.9%	44	0	44	34	0	990	1024
1995	4564	15664	3.84%	30.8%	65	0	65	62	6	1630	1698
1996	8390	18077	6.23%	32.0%	83	0	83	42	51	1535	1628
1997	12135	12786	8.95%	24.6%	143	0	143	45	58	217	320
1998	20461	12045	14.10%	24.2%	198	20	218	10	94	179	283

Sources: Polish numbers are from the International Finance Corporation 1998 and 1999 and include National Investment Funds; Czech numbers are from the Prague Stock Exchange webpage and the International Finance Corporation 1997 and 1999.

B. Quantitative Assessments

Table VII presents basic indicators of stock market development in Poland and the Czech Republic. In terms of capitalization, the Czech market in 1994 was twice as large as the Polish market, thanks to the more than 1500 firms listed on the Prague stock exchange as a result of privatization. As a share of GDP, the Czech market in 1994 was five times larger than the Polish market. By 1998, the valuation of the Polish market increased almost sevenfold. The valuation of the Czech market increased until 1996, but then fell, and the market ended up at roughly double its 1994 value. Over this period the Polish market rose to 14.1 percent of GDP, although the Czech market capitalization remained a larger share of GDP, at 24.2 percent.

Table VII also presents the number of listed companies in Poland and the Czech Republic. It separates the Czech companies into those trading on the main market (most liquid), those trading on the secondary market (with more limited disclosure and occasional trading), and those listed on the free market (with hardly any disclosure and infrequent trading). The listed Polish companies are separated into those trading on the main market and those trading on the parallel (again, less liquid) market. The

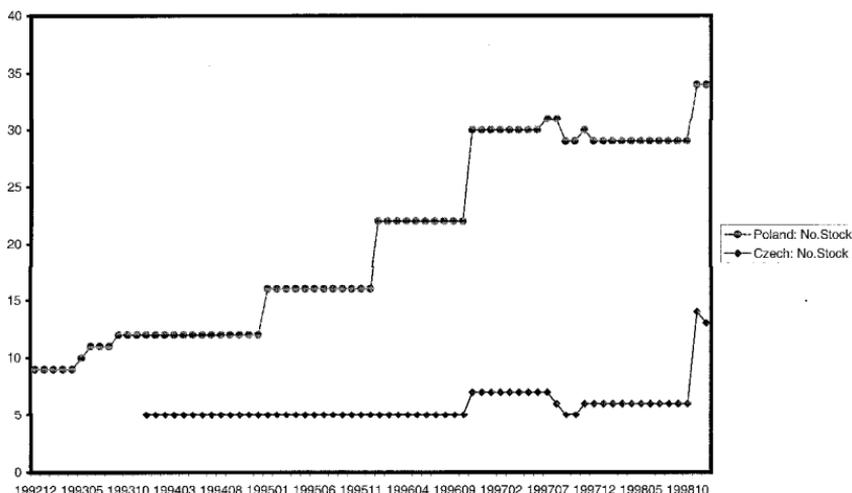


FIGURE IV

Number of Stocks in IFC Investable Index in Poland and the Czech Republic

vast majority of Czech companies barely traded, and most of the firms trading on the free market were delisted by the late 1990s. The number of firms on the main market, having risen to 62 in 1995, fell all the way down to 10 by 1998, with most of the firms being transferred to the less liquid secondary market. By 1998, most listed Czech firms had been either delisted or transferred to an exchange with only limited liquidity. In contrast, despite a much lower initial level, the number of listed Polish firms rose steadily over time, and hardly any firms were transferred to the parallel market.

Figure IV reports the number of Czech and Polish stocks over time included in the IFC Investable Index compiled by World Bank's International Finance Corporation, the maker of standard emerging market indices. The IFC Investable Index generally includes only the stocks liquid enough that foreign investors can "practically" take positions in them. This Index for Poland started out with 9 stocks in 1992 and rose to 34 stocks in 1998. In the Czech Republic the Index included five stocks in 1993 and only thirteen in 1998. Almost all of these thirteen stocks were either government or foreign controlled. The value of the IFC Investable Index in Poland, having started below that in the Czech Republic, has by the end of 1998 far surpassed it (Figure V).

Perhaps the most significant indicator of success of a finan-

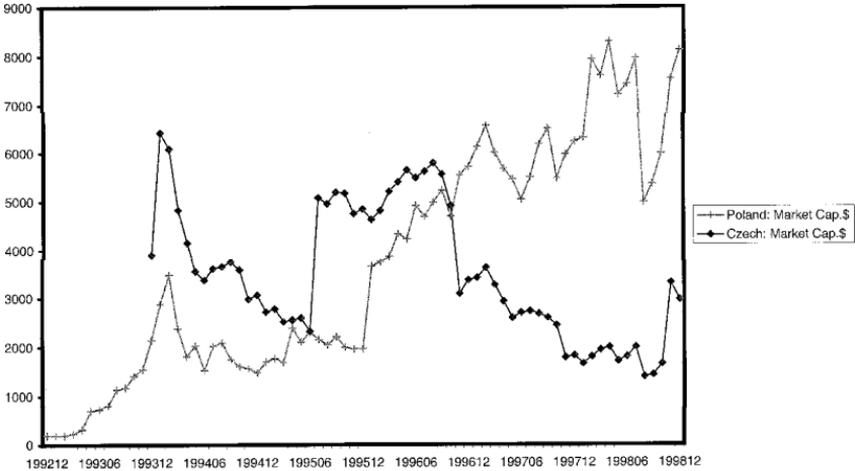


FIGURE V

Market Capitalization of Stocks in IFC Investable Index in Poland and the Czech Republic

cial market is how effectively it enables firms to raise capital. Table VIII presents data on the number of initial public offerings (for cash as opposed to vouchers) in the Czech Republic and

TABLE VIII
INITIAL PUBLIC OFFERINGS (FOR CASH)

	Czech Republic initial public offerings		Poland initial public offerings	
	Issued as part of privatization	Issued by private companies	Issued as part of privatization	Issued by private companies
1991	0	0	9	—
1992	0	0	5	2
1993	0	0	4	2
1994	0	0	8	14
1995	0	0	6	15
1996	0	0	3	15
1997	0	0	10	36
1998	0	0	5	52
Total	0	0	50	136

Figures do not include the National Investment Funds that were listed on the Warsaw Stock Exchange, or public issues for vouchers in the Czech Republic.

Source: Polish data are from the Warsaw Stock Exchange; Czech data are from Pioneer investment fund.

TABLE IX
NEW LISTINGS AND EQUITY CAPITAL RAISED
NEW EQUITY CAPITAL RAISED BY DOMESTIC COMPANIES MILLIONS OF U. S. DOLLARS

	Czech Republic		Poland		Czech Republic		Poland	
	Total capital raised through public issues		Total capital raised through public issues		Total capital raised through public issues		Total capital raised through public issues	
	Already listed companies	Newly admitted companies	Already listed companies	Newly admitted companies	On Prague Stock Exchange	On Warsaw Stock Exchange		
1996	0	0	319	67.5	0			386.5
1997	0	0	547.4	438.6	0			986
1998	0	0	818.6	328	0			1146.6

Source: International Federation of Stock Exchanges (FIBV), www.fibv.com.

Poland. It also distinguishes between offerings of shares in privatizing companies coming into public ownership through flotation, and offerings by new private companies—the latter being perhaps a more effective indicator of a market's effectiveness. Between 1991–1998 no Czech company sold equity for cash as part of initial privatization, whereas 50 Polish companies did.⁹ This is not surprising, since the Czech Republic has followed a noncash privatization strategy. At the same time, the data show that no private Czech company had done an IPO on the Prague exchange. By comparison, 136 nonprivatizing companies had gone public on the Warsaw exchange. This is perhaps the strongest evidence of the differential effectiveness of the two markets.

What about the total amount of capital raised on the stock exchange, by both already listed and newly admitted companies? Table IX presents the data since 1996. These numbers are more difficult to interpret since there have been several rights offerings in the Czech Republic, for which data are not available. The data again show that no new or already listed Czech company raised equity funds on the exchange through a public offering. In contrast, the Polish data show rapidly growing equity financing by both new and already listed firms. In 1998 over U. S. \$1 billion of new equity funds was raised on the Warsaw exchange.

9. A foreign-controlled mobile phone company, Ceske Radiokomunikce, raised \$134m in 1998 by issuing Global Depository Receipts in London.

This evidence is consistent with both the reading of the laws and the qualitative assessments. The regulated Polish stock market grew faster, maintained greater liquidity, and has been a better source of capital for firms than the less regulated Czech market.

After a period of hostility toward any criticism of its policies toward the stock market, the Czech government introduced a number of reforms starting in 1996. These included disclosure of blockholdings, greater regulation (through disclosure and otherwise) of investment funds, restrictions on trading off the exchange, some separation of investment and commercial banking, and finally, in April 1998, the creation of an independent Securities Commission.

VII. DISCUSSION

The quantitative and the qualitative evidence both point to significant problems in the Czech financial system. Still, we only have one comparison, and our analysis of even this case is subject to alternative interpretations. Here we discuss some of these interpretations.

To begin, our assessment of the Czech situation may be unduly harsh. Overall, the Czech economy performed well during the 1990s as the transition indicators show. Did the Czech firms simply avoid the stock market and raise capital elsewhere?

Although we have no data showing that the lack of equity finance has undermined investment by Czech firms, there is no evidence of effective substitute sources of external finance. The Czech banks have lent predominantly to the largest firms, and have themselves been subject to governance problems and tunneling, as evidenced by their huge nonperforming loans. If anything, the banking problems exacerbated rather than cured the lack of equity finance. The venture capital industry is also more developed in Poland than in the Czech Republic.

Industrial production grew faster in Poland than in the Czech Republic. Between 1991 and 1998 the index of industrial production fell from 113.3 to 109.7 in the Czech Republic, and rose from 73.6 to 127.4 in Poland. Much of that growth in Poland came from new firms, often relying on external equity finance. More generally, the available evidence from other countries suggests that stock market development is associated with faster

economic growth and better resource allocation [Levine and Zervos 1998; Beck, Levine, and Loayza 2000; Wurgler 2000].

A second concern holds that the Czechs may have only followed a different strategy of stock market development: float all the companies you can through privatization, and then see which ones survive market selection. As part of becoming private, firms could always commit, in the Coasian style, to charters that would obligate them to treat investors well, and thus facilitate external finance in the future. Even if the Czech strategy resulted in massive delisting of shares and investor losses in many firms, the fittest firms, with most market-friendly charters, survived. Such Darwinian arguments were made by the Czech reformers in the early 1990s. Indeed, the Czech market still has more listed companies than Poland's, and their aggregate value is still higher as a share of GDP. Is this approach to market development obviously inferior?

We believe that it is. In the 1990s the Czech market saw not some Darwinian selection of the fittest firms, but rather tunneling—the diversion (both legal and illegal) of assets from both good and bad firms. Coasian contracts bonding firms to treat investors well did not materialize. The survival of the theft-proof firms is not an efficient mechanism of economic selection. The most efficient firms might be the most attractive to tunnel, making them the least rather than the most likely to survive. Such tunneling was not expected either by the Czech reformers or the investors in the Czech firms. Moreover, the cost of tunneling has been the inability of both new and existing firms to raise equity capital, which is perhaps the market's main function. It is hard to consider this outcome a success even if the government had expected Darwinian selection.

Even if one agrees that the Czech stock market has not functioned admirably, one can still object to our inference that the lack of regulation is to blame. The leading alternative culprit is mass privatization in the Czech Republic, which led to the listing of hundreds of firms on the stock market. But privatized firms have generally outperformed those remaining in government hands in the Czech Republic [Claessens 1997; Claessens and Djankov 1999; Frydman et al. 1999] as elsewhere [Megginson and Netter 2001]. If anything, privatization could have jump-started financial markets. Moreover, if the regulation had focused on intermediaries as it did in Poland in the 1990s, the large number of listed firms would not have been a problem so long as the number of intermediaries was small. Indeed,

much of the tunneling in the Czech Republic was perpetrated by relatively few IPFs and related intermediaries, which could in principle have been regulated with limited resources. Ultimately, the arguments come back to the Czech failure to protect investors through the regulation of intermediaries.

Assuming that the regulation of financial markets was indeed inadequate in the Czech Republic, and that this inadequacy had some costs, why has the system not adapted in other ways to this regulatory failure? Several such adaptations come to mind. Perhaps private associations of market participants could have been created to enforce good conduct among members. Perhaps the Prague Stock Exchange could design its own, private regulations to protect investors, similar to those of Germany's Neuer Markt [Johnson 2000]. Perhaps the Czech companies could opt into more protective legal regimes, including those abroad, thereby committing themselves to good conduct and accessing external finance. Perhaps the Czech companies could individualize their corporate charters and incorporate good standards of conduct into these charters: in principle, a Czech company could agree to adhere to the Polish law in its charter. Finally, why did the Czechs not reform their judiciary and thereby avoid the need for regulation altogether?

An examination of the Czech record and of the experiences of other countries points to problems with each of these adaptation strategies. First, the Czech investment funds have indeed formed associations. But since some of their powerful members themselves engaged in tunneling, these associations were not a strong force against tunneling in the mid-1990s. The brokers in the Czech Republic, perhaps for related reasons, were unable to form an effective association. Second, some of the companies from the first wave of the Czech privatization have listed shares in Vienna and Berlin, but none raised capital there. They listed for the convenience of foreign traders, and the listing had no consequences for corporate governance since the underlying corporate and securities law remained Czech. Third, nonstandard corporate charters need to be enforced by courts, whose limitations we have already discussed. If rules from Poland are incorporated into a charter of a Czech firm, the Czech courts still need to interpret the Polish statutes, which even the Polish courts have trouble doing. In a world of limited judicial enforcement, customized charters are hardly a solution to the corporate governance problem.

The argument, then, boils down to the possibility of radical improvement of the courts, increases in b in the language of the model. As we have argued in Section III, transition economies still have a long way to go before their judiciaries achieve the efficiency levels of those in rich industrial countries. In the meantime, and consistent with the model, regulation can serve as a substitute for the judicial enforcement of private contracts and laws.

VIII. THE CASE OF HUNGARY

As a secondary check on our approach, we briefly consider financial regulation and market development in Hungary, another rapidly reforming East European transition economy. Hungary started the transition slightly poorer than the Czech Republic, but received similar high scores on reform as Poland and the Czech Republic. Hungary relied more heavily than the other two countries on sales of control to foreigners in privatization—a choice that influenced its securities markets. On the quality of the justice system, the 1996 Global Competitiveness Report gave Hungary the score of 2.92, indistinguishable from Poland and the Czech Republic. Gray et al. [1993] have the same complaints about the Hungarian judiciary as they do about the Czech and Polish judiciaries. The 1997 World Competitiveness Yearbook, however, gave Hungary a sharply higher score of 5.54 than it gave the other two countries, although still significantly lower than those of the rich industrial countries. The comparison with Hungary is not as clean an experiment as the comparison of Poland and the Czech Republic, but it does add some data.

Hungary reformed its corporate law in 1988, and securities law in 1990, a bit earlier than the other two countries. Its shareholder rights score is 2, the same as the Czech Republic and a point below Poland. In its regulation of securities markets, Hungary falls clearly between the two countries. Unlike Poland, and like the Czech Republic, it had almost no regulations of individual brokers and none of investment advisors. Hungary regulated brokerage firms more strictly than the Czech Republic, but still did not have the Polish “honest trading” requirements. Hungary also had very weak stock market regulations, and in particular no requirement that trading must take place on the exchange or that the exchange must ensure a uniform market price. Hungary’s regulation of mutual funds was between the Polish and the

Czech. On the other hand, Hungary, like Poland and unlike the Czech Republic, had relatively strict regulation of custodian banks. With respect to the issuers of securities, Hungary, like Poland, required permission of the regulator to bring a new issue to the market, as well as a prospectus. It only required annual reporting of financial information and no disclosure of ownership, however. In sum, Hungary regulated securities markets far more thoroughly than the Czech Republic, but not as pervasively in some important dimensions as Poland. Consistent with this assessment of the legal rules, the Budapest Stock Exchange was admitted only to associate membership of the International Federation of Stock Exchanges—not as good as the full membership granted to the Warsaw Exchange, but better than the outright exclusion of the Prague Stock Exchange.

What about the development of the stock market? Hungary actually exceeded both Poland and the Czech Republic in the ratio of market capitalization to GDP, which stood at 29.2 percent in 1998. This ratio, however, reflected foreign control and high valuation of the largest firms, including the phone company controlled by Ameritech and Deutsche Telekom which accounted for half of the aggregate stock market value. At the end of 1998, Hungary had only 55 listed companies, fewer than either of the other two countries. Of the 59 firms that had listed on the Hungarian market by 1998 (four subsequently delisted), 54 did so as part of privatization and did not raise any funds. Only five were new private firms, and three of them were foreign-controlled. This compares favorably with the Czech Republic, but falls far short of the Polish success. The Hungarian companies raised about \$80 million between 1997 and 1998 in the equity market, compared with over \$2 billion raised by the Polish firms.

Although Hungary differs from Poland and the Czech Republic in some potentially important respects, this evidence is consistent with our approach. Hungary's stricter regulation of markets than that in the Czech Republic (as well as significant foreign control) paid off in a higher market valuation, as well as some equity market access for new firms, but it had not experienced the huge success with securities markets seen in Poland.

IX. CONCLUSION

Our analysis leads to three conclusions. First, the evidence corroborates recent research arguing that financial markets are

helped by the legal protection of outside investors—both shareholders and creditors—from expropriation by issuers and financial intermediaries. This indeed has been the focus of the Polish financial regulations in their emphasis on disclosure and the administrative oversight of the intermediaries.

Second, the evidence is consistent with the prediction of the model that an important element of investor protection is the disclosure of information by issuers and intermediaries. Such disclosure is often mandated by securities laws, which thus play a key role in investor protection. The benefits of disclosure are both to reduce the cost to the regulators (and judges) of getting informed, and to enable private corporate governance mechanisms to function more effectively.

Third, and most generally, the analysis bears on a crucial question in law and economics: who should enforce laws or contracts? We establish the conditions under which regulatory enforcement presents an attractive alternative to judicial enforcement. In emerging markets, where the costs of verifying the circumstances of specific cases and interpreting statutes are high, judges may not be sufficiently motivated to enforce legal rules. Enforcement by regulators, with more lopsided but powerful incentives, may then be a more efficient way to protect property rights. The Polish regulation of securities markets presents one example of such evidently beneficial regulation taking place in precisely the circumstances suggested by our model.

HARVARD UNIVERSITY AND NBER
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
HARVARD UNIVERSITY AND NBER

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