

Corporate Environmental Strategies in Developing and Transition Economies

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Corporate environmental sustainability efforts are familiar in the developed world...

Unilateral/Trade Association Initiatives

♻️ ACC's *Responsible Care*®



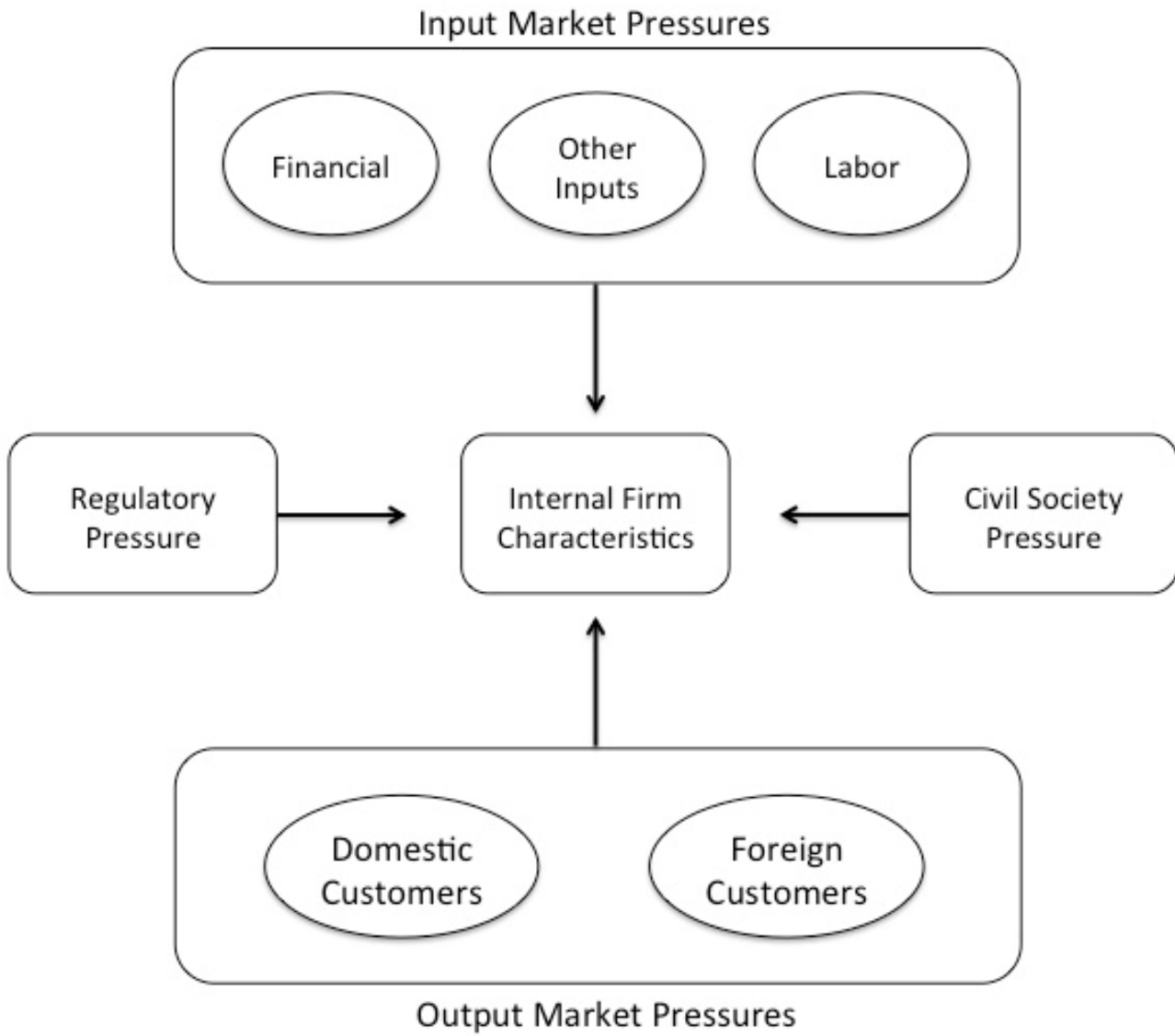
 Chicago Climate Exchange

♻️ McDonalds' clamshell containers

Participation in government voluntary programs

EPA's 33/50 Program; Energy Star Programs; ClimateWise and WasteWise
German CO₂ agreements; Dutch covenants on toxic waste

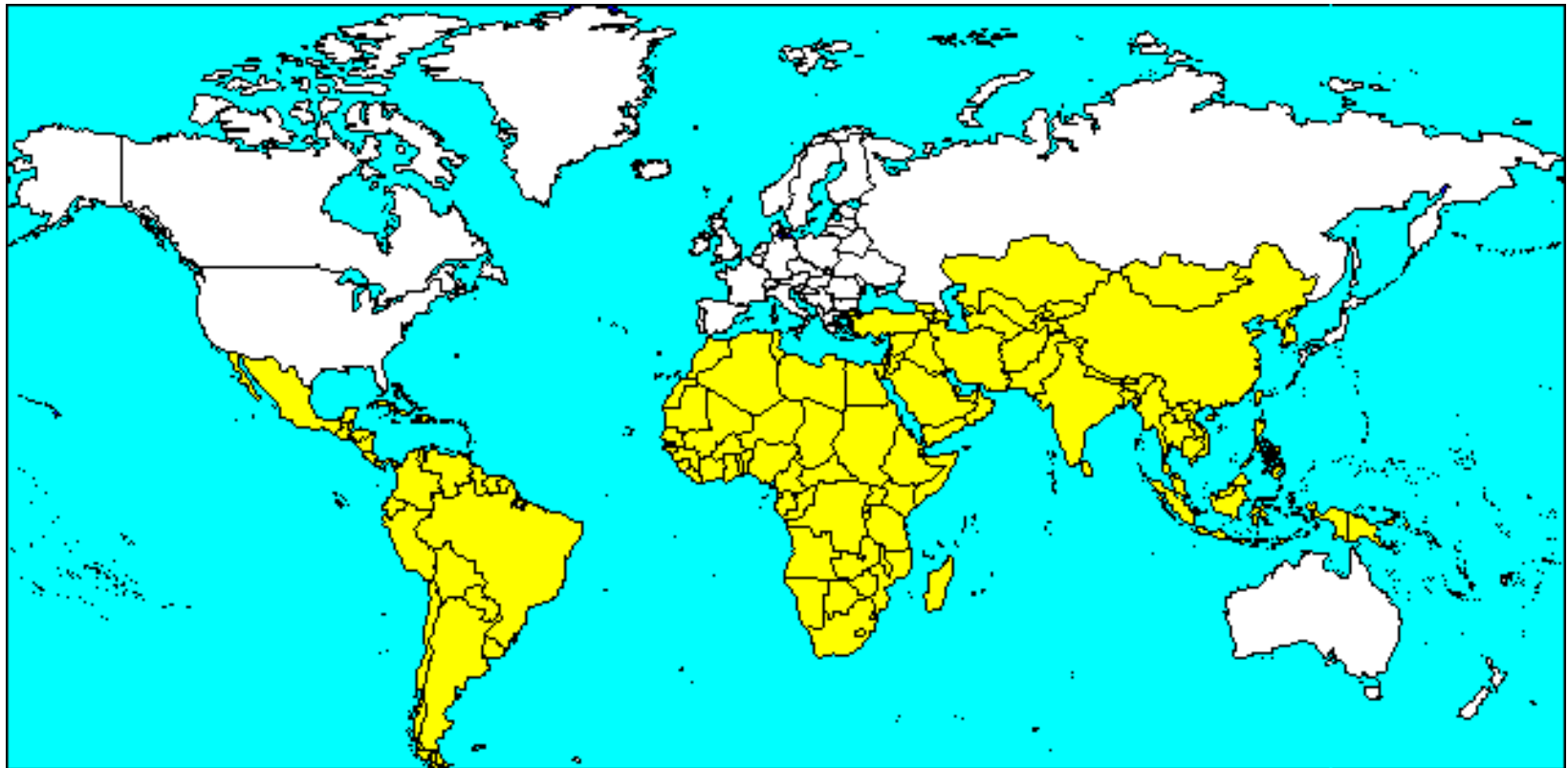
Drivers of Corporate Environmental Strategy



Motivations for this Research

- To understand the existing evidence on motivations for corporate environmental management strategies in developing and transition economies
 - » Types of strategies: Adoption of environmental technology; environmental management systems, compliance, R&D
 - » Heterogeneity in response across types of firms and types of economies
- Implications of corporate behavior in these countries for their
 - » Becoming pollution havens
 - » Achieving broad-based ethic of environmental protection
 - » Strengthening domestic regulatory efforts

DEVELOPING COUNTRIES

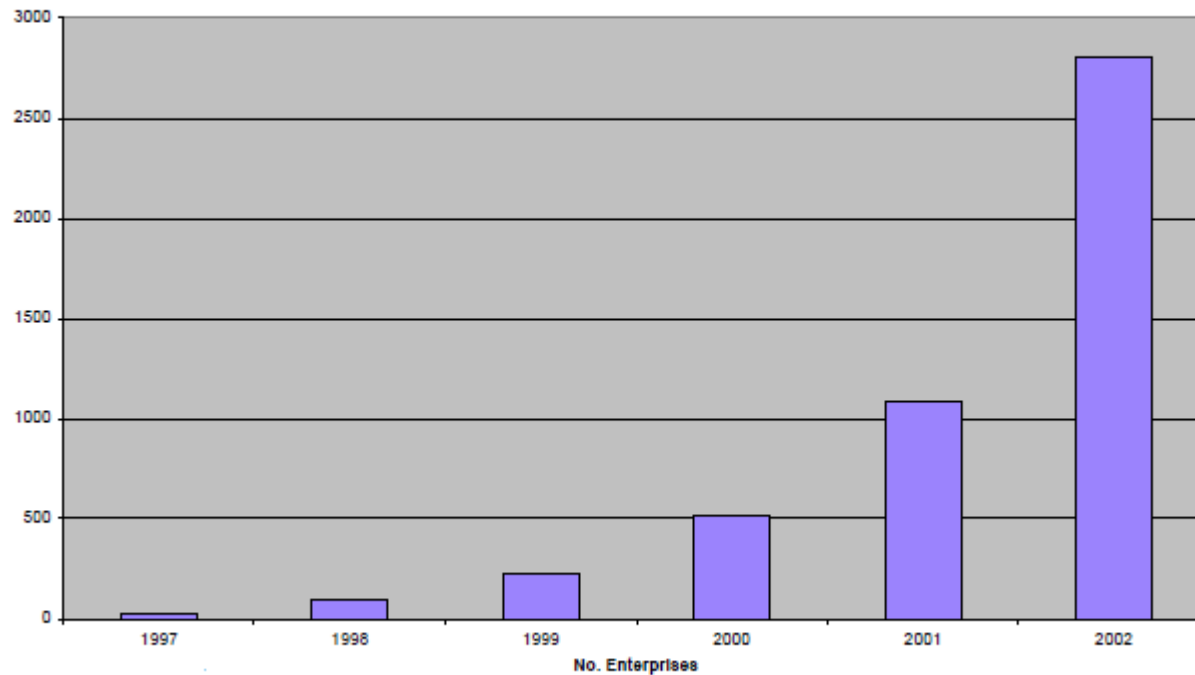


Domestic Pressures for Environmental Management in Developing Countries

- Limited monitoring and law enforcement capacity
- Diversity of types of enterprises: state-owned, small scale/informal sector, large scale formal sector, multi-nationals
- Low levels of regulatory compliance
- Corruption
 - » Influence of industry on regulators
- Low but growing level of environmental awareness/education
- Low percapita incomes
- Economic dependence on polluting firms
- Market Based Pressures:
 - » Stock market pressures
 - » Community pressures/NGOs
 - » Public education programs

High Rates of Adoption of ISO 14001

Figure 1. ISO Certifications in China



Source: ISO 2002.

Between 1997-2002

In South Korea and Singapore, number of ISO certification increased 6 times

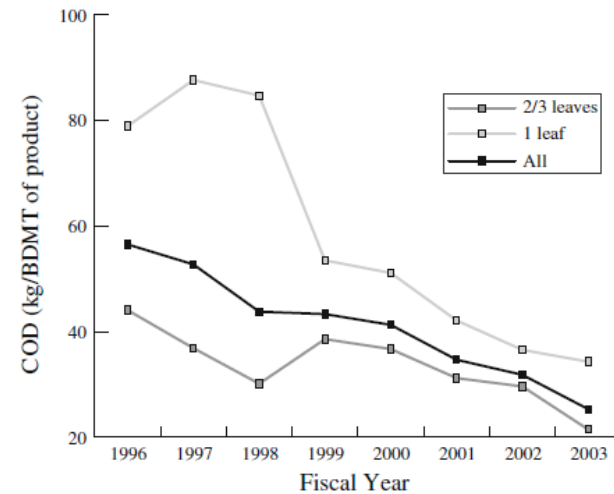
In Thailand, increase was 11 times

Far-eastern countries account for 50% of worldwide ISO certifications

Other Environmental Management Efforts

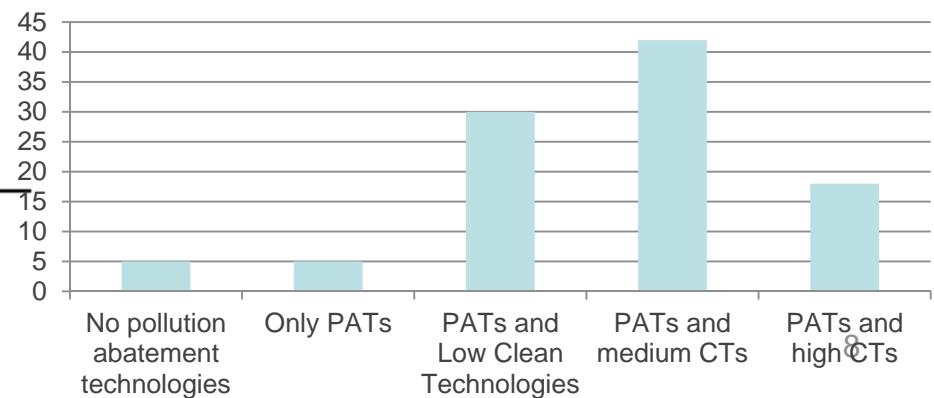
Table 1
Comparative impacts of public disclosure programs on compliance status of industrial polluters

Country/year	%Non-compliant	%Compliant	Change in % compliant
<i>Indonesia^a (PROPER)</i>			
1995	63	37	
1997	39	61	+ 24
<i>Philippines^b (ECOWATCH)</i>			
1997	92	8	
1998	42	58	+ 50
<i>Hanoi, Vietnam^c</i>			
2001	90	10	
2002	76	24	+ 14
<i>Zhenjiang, China^d (GreenWatch)</i>			
1999	25	75	
2000	15	85	+ 10
<i>Hohhot, China^e (GreenWatch)</i>			
1999	77	23	
2000	38	62	+ 39



Annual unweighted average discharges of chemical oxygen demand (COD) from 22 pulp and paper participating in India's Green Ratings Project, by performance rating

Percentage of Firms Adopting Environmental Technologies in Developing Countries



Key Drivers

Internal

- Large firms with technical, managerial or organizational capabilities
- Foreign ownership
 - » Evidence of a pollution halo effect rather than a pollution haven effect of MNCs
- Private ownership
- Larger polluters, lower level of internal efficiency, weaker product brand identity

Civic Society

NGOs; educated and wealthy communities

Market Pressures

- Pressure from consumers in export markets and firms downstream in the supply chain
 - » ISO certified facilities more likely to assess their suppliers' environmental performance and require that their suppliers undertake specific environmental practices.
- Variability in implementation of ISO 14001: Substantive vs symbolic implementation more likely if
 - » Customers place greater importance on it
 - » Direct and frequent monitoring by customers
 - » Cost to customers of switching suppliers is low
- Water and energy prices

Government

- Regulatory pressures
 - » Regulatory flexibility and technical assistance
- Information disclosure programs
 - » Improved compliance (10-50%) within the first year
 - » Improvements mainly by worst polluters after controlling for other factors
- Voluntary programs: Mixed evidence
 - » Voluntary agreements with clear time-tables, firm-specific commitments and mechanism for monitoring improved compliance
 - » Negotiated targets were often not too ambitious

Regulatory Pressures: China

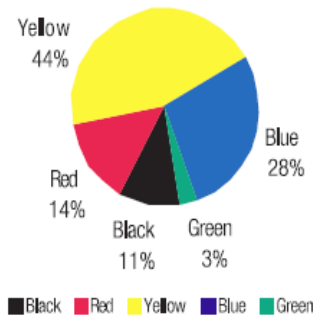
- National environmental legislation (pollution levy) but with uneven and ineffective local implementation
 - » Variation in enforcement to protect local economic interests
 - » Bargaining power of state-owned and collectively owned firms
 - » Self-reporting of emissions with low likelihood of misreporting being detected
 - » Levy rate is negotiable and at the discretion of local regulators
 - Varies with economic impact, political power, citizen complaints
 - » Levy operates as a deposit-refund system
 - 80% of levy payments can be obtained as a rebate for pollution abatement investments
 - Can be written off as production costs and reduce other tax liabilities

Effectiveness

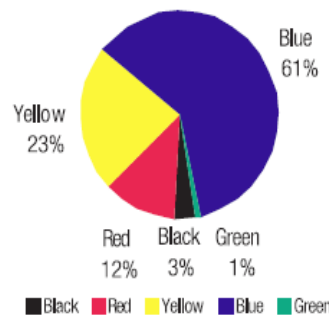
- Assessment of effectiveness of levy mixed
 - » Potential to recoup fee payments as rebate and weak monitoring of investment in pollution control
 - » State-owned enterprises more polluting than others
 - Soft budgets and more inefficient
 - » Deterred non-compliance and induced process changes rather than end-of-pipe treatment
 - » Deterrence effect larger in wealthier communities
 - » Accuracy of environmental data questionable

Information disclosure program in China: Green Watch Rating

A. Pilot Internal Disclosure in June 1999
(1998 data)

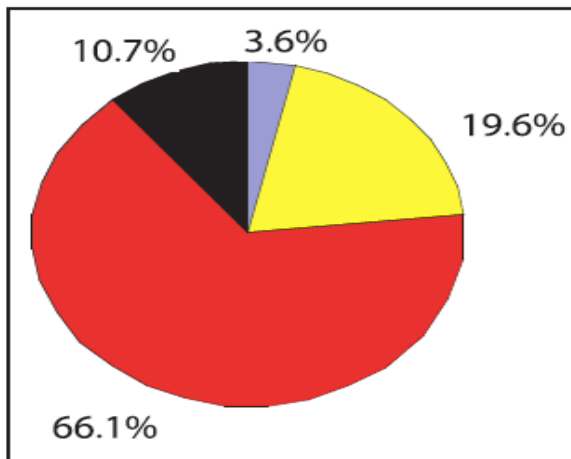


B. Formal Disclosure in July 2000
(1999 data)

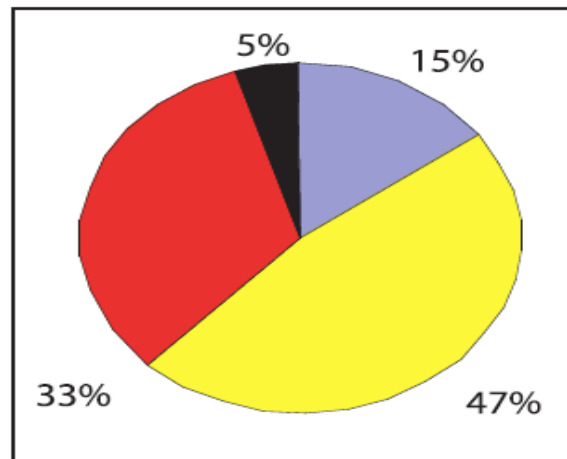


- Black Very Poor Discharges of ashes, SO₂ and COD all exceed legal requirements
- Red Poor for the three pollutants — ashes, SO₂ and COD — discharges of one or two do not satisfy legal control requirements.
- Yellow Good Discharges of ashes, SO₂ and COD all satisfy legal control requirements.
- Blue Superior Discharges of ashes, sulfur dioxide (SO₂) and chemical oxygen demand (COD) are all less than 60% of the permitted limit.
- Green Excellent Certification by ISO14000.

Figure 4.3: Environmental Performance Ratings in Zhenjiang



Ratings in 1999



Ratings in 2000

Figure 5.1: Environmental Performance Ratings in Hohhot

Effective in inducing firms with foreign owners, private ownership, export oriented, higher profitability to have higher rating

Soviet-style Economies: Central and East Europe



Transition

- Extensive transformation
- Fast transformation
 - 1989 to 2004 (1st EU)
 - 1989 to 2007 (2nd EU)

Transition Forces

- Price liberalization
- Privatization
- Budget constraint
- Enterprise restructuring
- Trade development
 - » Barriers removal
 - » Foreign currency exchange
- Foreign investment / ownership
- Capital markets growth

Transition Forces

- Environmental Regulator
 - » Protection laws strengthening
 - » Incentive-based policies intro (e.g., emission charges)
 - » Capacity development
 - ambient, emissions measurement
 - inspections, enforcement
 - » Relationship: more adversarial

Transition Forces

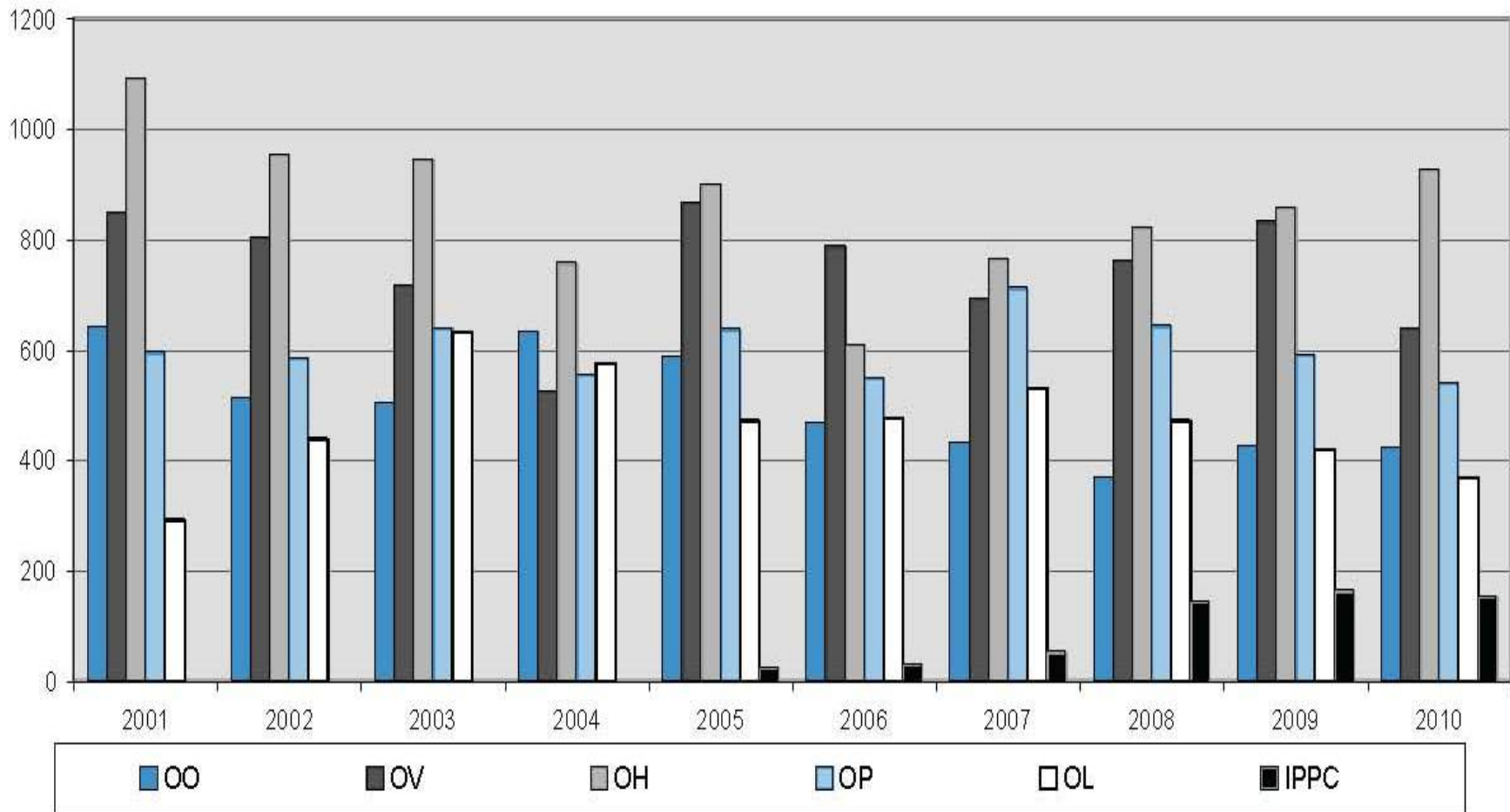
- Civil society growth
 - » free speech
 - » independent press
 - » environmental NGOs
 - 3000 NGOs by 1997
 - » access to environmental info

Regulatory Presence: 1998

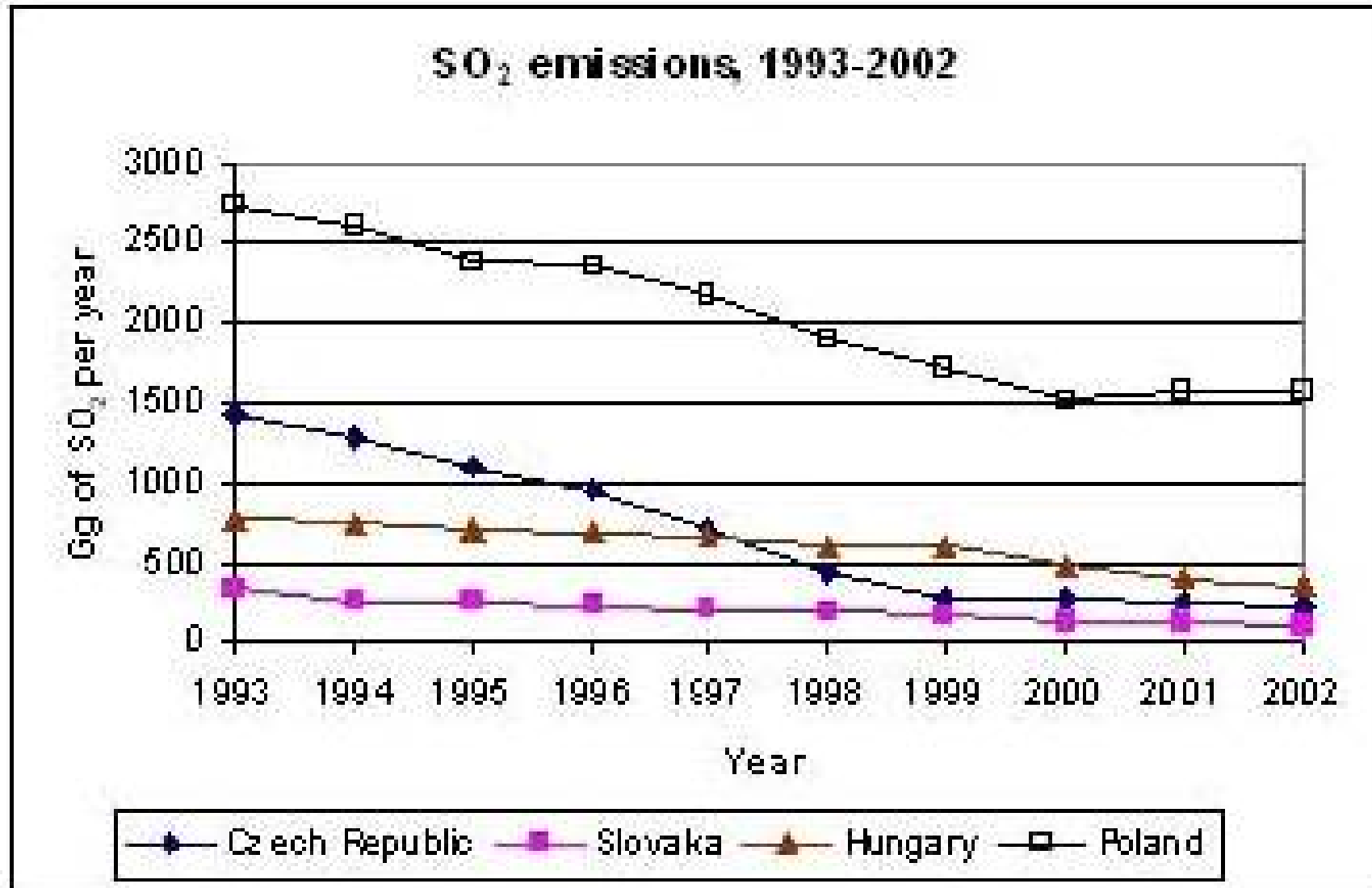
Country	Water Pollution Inspections Interval (months)	Air Pollution Inspections Interval (months)
Bulgaria	7.5	9.1
Hungary	3.0	1.6
Lithuania	3.1	8.0
Poland	10.6	6.3
Romania	2.7	2.4
Slovakia	3.8	4.4

Czech Enforcement: 2001-2010

Development of the number of penal and remedial measures according to departments



Success: Less Pollution



Firm Environmental Behavior

- Measures
 - » Environ plan adoption
 - » Environ dept establishment
 - » Audit, pollution prevention program
 - » ISO 14001 equivalent
 - » Public environ report
 - » Environ training
 - » Clean technology adoption
 - » Emissions: absolute, relative to limit

Firm Environmental Behavior

- Drivers of better behavior:
 - » External: Regulatory
 - Permits: certain practices
 - Self-reporting of emissions
 - Enforcement: robust
 - Inspections: certain practices
 - Emissions charges
 - » External: Other
 - Community pressure: certain cases
 - Public disclosure in media

Firm Environmental Behavior

- Drivers of better behavior (cont):
 - » Internal:
 - Private ownership: mixed
 - State ownership: mixed
 - Foreign invest/own: certain practices
 - Export orientation: certain practices
 - Foreign mkt pressure: certain practice
 - Mgt-related internal pressure
 - Need to reduce energy use, material waste: certain practices
 - Profitability (liquidity constraint)

Firm Environmental Behavior

- Impediments to better behavior:
 - » Economic performance – higher returns to labor
 - » Private, State Ownership
- Irrelevant factors:
 - » Investor pressure
 - » Customer pressure

Conclusions

- Firms are strategic about corporate environmental management and respond to incentives and pressures

Developing economies:

- » Weak role of government: Significant non-compliance
- » Environmental management driven by foreign customers, foreign direct investment and international NGOs
- » Incentives for state and smaller, locally owned firms weak

Transition economies

Government pressures important

Internal characteristics: leadership, profit orientation and scale

- Empirical evidence on broader strategies: decisions regarding compliance, preemption, exploiting green markets non-existent

Focus on adoption of environmental practices and technologies

Spillover effects and diffusion from MNCs to other firms limited