• RAM, REV. ADM. MACKENZIE, V. 11, N. 4 • SÃO PAULO, SP • JUL./AGO. 2010 • ISSN 1678-6971 •
Submissão: 11 nov. 2009. **Aceitação:** 14 maio 2010. **Sistema de avaliação:** às cegas dupla (*double blide review*).
UNIVERSIDADE PRESBITERIANA MACKENZIE. Walter Bataglia (Ed.), p. 154-177.

STRUCTURAL REFORM AND ENVIRONMENTAL PROACTIVITY: THE CASE OF BRAZILIAN COMPANIES*

REFORMA ESTRUTURAL E PROATIVIDADE AMBIENTAL: O CASO DAS EMPRESAS BRASILEIRAS

MONICA CAVALCANTI SÁ ABREU
Pós-Doutorado pelo Instituto de Produção da Universidade de Cambridge.
Professora da Faculdade de Economia, Administração, Atuárias e Contabilidade da Universidade Federal do Ceará (UFC).
Avenida da Universidade, 2.853, Benfica – Fortaleza – CE – Brasil – CEP 60020-181
E-mail: *mabreu@ufc.br*

CLAIRE Y. BARLOW
Doutora em Engenharia de Materiais pelo Departamento de Ciência dos Materiais e Metalurgia da Universidade de Cambridge.
Professora do Instituto de Produção da Universidade de Cambridge
Institute for Manufacturing – 17 Charles Babbage Road – Cambridge – CB3 0FS – UK
E-mail: *cyb1@cam.ac.uk*

JOSÉ CARLOS LÁZARO SILVA FILHO
Doutor em Planejamento Ambiental pelo Instituto de Gestão em Planejamento Ambiental da Universidade Técnica de Berlim.
Professor da Faculdade de Economia, Administração, Atuárias e Contabilidade da Universidade Federal do Ceará (UFC).
Avenida da Universidade, 2.853, Benfica – Fortaleza – CE – Brasil – CEP 60020-181
E-mail: *lazaro@ufc.br*

FRANCISCO ASSIS SOARES
Livre-Docente pela Faculdade de Economia, Administração, Atuárias e Contabilidade da Universidade Federal do Ceará (UFC).
Professor da Faculdade de Economia, Administração, Atuárias e Contabilidade da Universidade Federal do Ceará.
Avenida da Universidade, 2.853, Benfica – Fortaleza – CE – Brasil – CEP 60020-181
E-mail: *soares@ufc.br*

* I would like to thank to CNPq (National Counsel of Technological and Scientific Development – Project #400766/2008-6) for funding this research.

ABSTRACT

Since the mid 1990's, Brazilian companies have faced a huge structural reform associated with trade liberalisation, deregulation and decrease of state intervention. In this context, they have been pressured to behave in a more socially and environmentally responsible manner. The objective of this paper is to identify whether environmental strategies were influenced by degree of internationalization, size and stakeholders' pressures. It was used the strategy of case study with the technique of systematic interviews for primary data collection. The research was conducted in petrochemical, steel, textile and shoe industries, established in different Brazilian states, chosen by theoretical sampling. The empirical results demonstrate that modern preventive natural environmental approaches seem clear in large companies that have international investors and operate in global markets. It is markable in the steel and petrochemical companies. The study finds that the structural reform has caused a positive environmental effect on Brazilian companies because global ties increase self-regulation pressures and enforces the engagement of a new range of stakeholders.

KEYWORDS

Comparasion of institutional environments across emerging markets; Corporate social responsibility; Environmental management; Sustainable development in emerging market economies; Stakeholder engagement.

RESUMO

Desde a metade dos anos 1990, as empresas brasileiras têm enfrentado uma ampla reforma estrutural, associada à liberalização do comércio, à desregulamentação e ao decréscimo do estado de intervenção. Nesse contexto, elas têm sido pressionadas para agir de maneira mais responsável, tanto socialmente como ambientalmente. O objetivo deste trabalho é identificar se as estratégias

ambientais foram influenciadas pelo grau de internacionalização, pelo tamanho e pelas pressões dos *stakeholders*. Empregou-se a estratégia de estudo de casos com a utilização da técnica de entrevista sistemática para coleta de dados primários. A pesquisa foi conduzida em empresas petroquímicas, siderúrgicas, têxteis e de calçados estabelecidas em diferentes Estados brasileiros, escolhidas por amostragem teórica. Os resultados empíricos demonstram que as abordagens ambientais preventivas parecem claras nas grandes empresas que têm investidores internacionais e operam em mercados globais. Destacam-se as empresas petroquímicas e siderúrgicas. Os resultados do estudo demonstraram que as reformas estruturais causaram um efeito ambiental positivo nas empresas brasileiras, em função de as conexões globais aumentarem as pressões autorregulatórias e propiciarem o engajamento de um novo conjunto de *stakeholders*.

PALAVRAS-CHAVE

Comparação de ambientes institucionais entre mercados emergentes; Responsabilidade social corporativa; Gestão ambiental; Desenvolvimento sustentado em economias de mercados emergentes; Engajamento de *stakeholders*.

1 INTRODUCTION

The globalization of the business environment in recent years has made it imperative for firms to look for foreign market opportunities in order to gain and sustain competitive advantages. Firms from emerging economies are a growing presence in an integrated global economy (AULAKH; KOTABE; TEEGEN, 2000). Countries in Latin America have opened their markets to international trade and investment. They have also taken steps to stabilise their economies through curbing inflation substantially, controlling budget deficits, privatising many state enterprises, and revaluing their currencies (DOMINGUEZ; BRENES, 1997). This type of economic and social policy was reflected in what came to be called the *Washington Consensus*: a set of policies that countries around the world had to adopt if they were to receive assistance from the major international financial institutions (BLOWFIELD; MURRAY, 2008).

In order to stabilize the economy, Brazil has accelerated the denationalization of state-owned industries and intensifies its inclusion in the world economy with the framework of neo-liberal policies (GREEN, 2003). This reform can be seen as composed of three main blocks: market focus (trough trade liberiza-

tion), industrial change and a regime of incentives and regulations (FERRAZ; KUPFER; SERRANO, 1999). The competitive integration strategy can also be described as a market friendly approach to industrialization.

Trade liberalization, aiming at increasing both imports and exports and exposing the local industry to international competition, has changed the market focus. The industrial change, in turn, was set to be modified by means of privatisation of state companies and attraction of direct foreign investment. Decreasing government intervention in the economy (deregulation) has been the main feature of the regime of incentives and regulations.

Globalization also has heightened concerns about the ability of national governments to regulate natural environmental conduct in the global economy. New actors have emerged in the international arena voicing concerns about the impact of unfettered globalization on the natural environment and influencing firms to introduce environmental issues as a key consideration of the core business (CHRISTMANN; TAYLOR, 2001, 2002).

Environmental proactivity is typical when companies voluntarily take measures to reduce their impact on the natural environmental (ARAGON-CORREA, 1998; HART, 1995; HUNT; AUSTER, 1990). According to Gonzalez-Benito and Gonzalez-Benito (2006), environmental proactivity denotes three practices: planning and organisation; operation; and communication. The first practice means the extent to which a company has defined an environmental policy and developed procedures to establishing environmental objectives. The second represents selecting and implementing operational procedures and assessing the outcomes of the respective processes. And the third has allocated responsibilities and communicates the action taken in favour of the natural environment

Market and business factors play the most important roles in a decision making process, but a wide array of forces such as regulatory demands, stakeholder forces, cost factors and competitive requirements drive corporations to adopt proactive environmental management (BERRY; RONDINELLI, 1998). Company size, degree of internationalization and position in the value chain were identifed as internal determinant factors of a company's environmental proactivity (BLOWFIELD; MURRAY, 2008).

Gonzalez-Benito and Gonzalez-Benito (2006) include external factors such as industrial sector (environmental risk, concentration and cohesion) and geographical location. Managerial perceptions are also critical because they ultimately determine stakeholder salience – the degree to which managers give priority to competing stakeholders claims (MITCHELL; AGLE; WOOD, 1997; BUYSEE; VERBEKE, 2003; DELMAS; TOFFEL, 2004).

The renewal of environmental consciousness in Brazilian society begins in 1990s, together with the corresponding growth in the extent and stringency of

related regulations. This consciousness has brought about a change in the nature of the environmental pressures on the industry because these issues began to affect the market place directly. By becoming market-related factors, such pressures have promoted an associated change in the nature, source, means and geographical scope of firms' environmental response.

In the light of these diverse and conflicting contentions, this paper examines contextual factors that have influenced the environmental proactivity of steel, petrochemical, textile and shoe companies due to structural reform. Steel and petrochemical companies started the National Programme of Privatisation. Concurrent with the acceleration of trade liberalisation, these firms moved on to increase productivity levels by curbing organisational and other sources of inefficiency (FERRAZ; KUPFER; SERRANO, 1999). They also were better placed to undertake the structural reform because they are large, have strong overseas association, and produce durable goods as well as intermediate products.

On the other hand, textile and shoe companies were always privately run in Brazil. They were severely affected by the entrance of low cost products on the Brazilian market which increased competition. A substantial percentage of companies did not resist external competitive pressure and failed; others invested in equipment, acquired other companies and integrated all the supply chains in order to increase the productivity and quality of their products. These companies have changed their competitive strategy, focusing on differentiation or becoming an overall cost leader.

The paper is structured as follows. The next section develops a synthesis of the Brazilian industry reform, and we also provide an overview of the new institutional context faced by petrochemical, steel, textile and shoe industries. It is then explained how environmental pressures have emerged alongside this broad processes of social, political and economic reform. The third section presents the empirical research methodology. The fourth section presents the main finding and the final section draws conclusions as to where these efforts have brought us to in respect of environmental proactivity in Latin America.

2 AN HISTORICAL OVERVIEW OF BRAZILIAN STRUCTURAL REFORM

In post-World War II, Brazil started the industrialization process by restricting foreign imports and investing strongly in infrastructure. The decision was taken that one industrial region would be enough to support all the country. From South Eastern Brazil, the economic development would spread to other

regions. This regional industrial concentration resulted in enormous pressure on government to provide adequate infrastructure for a growing number of industrial firms. Additionally, it created in South Eastern Brazil a region which was completely economically and socially disparate from other regions.

In the 60s the political situation was unstable. The aftermatch of the March 31 of 1964 coup d'etat, when democracy was replaced by military government from 1964 to 1985, reinforced the characteristic of the economic development centralised and conducted by the government. The autarkic development model adopted draws on structuralist macroeconomic policies, which set a lower priority on fiscal and current account prudence than do orthodox policies (AUTY, 1995).

Until the 1980s the growth of industries had occurred behind highly protective barriers and the emphasis by various governments was on attracting as much foreign direct investments (FDI) as possible by minimising regulations which would be perceived as adverse to the profits of these industries. As pointed out by Auty (1995), this policy option had adverse and cumulative consequences for economic development. The military governments did not push reform to autarkic policy far enough, allowing problems to persist and grow: widening income inequality, the rapid expansion of state intervention, and the foreign exchange constraint.

Brazilian government used state firms as instruments of macroeconomic policies causing large deficits in their operations and forcing the government to provide large subsidies. Many state firms succumbed to political pressure to over-employ, and as the state sector contributed towards increasing the governement's budget deficit, it became a "crowding-out" phenomenon in relation to the private sector. According to Baer and Bang (2002), monopoly encouraged state firms to become inefficient, and many abused their positions in their dealing with private sector clients.

As a response to fears of hyperinflation, Brazil's stabilization plan of 1994 ("Plano Real"), was based on an economic strategy that linked the local currency (Real) to the dollar at a relatively fixed rate. This provided a basis for stopping the inflationary spiral. Trade liberalisation followed, contributing to an increase in the internal supply of goods by reducing the demand pressure on prices (TIGRE; BOTELLHO, 2001).

Furthermore, the privatisation process seemed to be the solution to both the fiscal crisis and the lack of resources to finance investments (BAER; BANG, 2002). Brazil has changed fundamentally and in the recent period it has experienced a more stable process of democratisation in its social and political institutions.

3 UNDERSTANDING THE RESEARCH CONTEXT OF PETROCHEMICAL AND STEEL INDUSTRIES

The National Programme of Privatisation (Programa Nacional de Desestatização – PND) was established by law n° 8.031 in 1990. It has played an important role in the economic changes defined by the government. In the beginning, Federal Government concentrated efforts on privatising productive state-run companies. Hence the privatization initiative began with steel, petrochemical and fertiliser companies. These industries were characterized as oligopolies, state run and protected not only by high barriers to the entry of the new firms, but also in their ability to establish backward and forward linkages into their supply chain.

The Brazilian petrochemical complexes have been added in São Paulo, Bahia and Rio Grande do Sul states, following the tripartite joint venture model between the Brazilian government (Petroquisa), the private sector in Brazil and international capital. Foreign petrochemical players operating in Brazil are controlled by their overseas headquarters and operate according to their worldwide strategy. Nonetheless, the production capacity of these companies caters mainly to the local market.

Prior to privatisation, the steel companies had been managed with political and strategic objectives and were beset with problems. These are typified by: production lines limited by insufficient inputs, supplier and transport cartelisation, poor labour relations, steel prices indirectly managed by the government via buyer subsidies, negative and discredited image with respect to supply time and quality (JENKINS, 2001).

From 1990 to 1994, Federal Government privatised 33 companies, where 18 were state run and 15 were minority participations of Petroquisa and Petrofertil (Petrochemical and Fertiliser companies). Buyers of these firms were overwhelmingly domestic private groups, with foreign participation amounting only to about 6 % of total receipts (BNDES, 2002). From 1995 to 2002 the international capital represented 53% of the total investments (BNDES, 2002). Nowadays, Brazilian petrochemical and steel industry is controlled by a mix of stock ownership involving a small group of controllers.

The privatisation process enabled the petrochemical and steel firms to establish a clearer commercial footing and to move beyond these obstacles. This included: product diversification, greater emphasis on client service, adding value to products and steel production optimisation. Firms verticalised both in terms of attention to their clients and of moving upstream to control their suppliers by buying shares in other privatised companies which provided energy, transport and raw materials (PINHO; SILVEIRA, 1998).

4 UNDERSTANDING THE RESEARCH CONTEXT OF TEXTILE AND SHOE INDUSTRIES

Brazilian textile and shoe industries are characterized by being highly competitive and locally owned. According to Kon and Coan (2005), in the 1980s, the textile industry was technologically obsolete as the investments had been interrupted. Furthermore, in the 1990s a severe disease affected Brazilian cotton-growing. As a result, raw material and synthetic fibres had to be imported, which entailed extra cost to the industry.

The impact of the commercial opening on these sectors was more intense than in other sectors, leading to an intense concentration of movement, and consequent implications on labour productivity. Many companies had moved to North Eastern Brazil thanks primarily to state-level fiscal incentives and labour cost differentials from Southern states. At that time, developed countries started trying to protect their own companies and established barriers to production from developing countries.

A substantial percentage of companies did not resist external competitive pressure and failed; others invested in equipment, acquired other companies and integrated all the supply chain in order to increase the productivity and quality of products. These companies have changed their competitive strategy to focus on differentiation or becoming anoverall cost leader.

The Brazilian trade liberalization process has intensified the competition leading to a blurring of the traditional boundaries between these firms and a realignment of interests and pressures within the chain. Profits derive from a unique combination of high-value research, design, sales, marketing and financial services that allow retailers (e.g. C&A, Wal-Mart), branded marketers (e.g. Reebok, Nike) and branded manufacturers to act as strategic brokers in linking overseas factories with evolving product niches in the main consumers market (GEREFFI, 1999).

5 INTRODUCING ENVIRONMENTALLY RESPONSIBLE PRESSURES ON BRAZILIAN INDUSTRIES

During the military government (from 1964 to 1985), most Brazilian policy makers accepted the position that pollution and environmental degradation were a price worth paying for development. The government was so preoccupied with the stimulation of new industrial investments that any explicit concern with the

issue would have seemed to be detrimental to such efforts (BAER; MULLER, 1995; 1996). The main argument put forward by Brazilian representives was that the polution problems had been created by the developed countries to prevent the industrial expansion of developing countries.

An environmental policy began to take shape in the mid-1970s. In 1973 the special secretariat for the environment (Secretaria do Meio Ambiente – Sema) was created. The main task of Sema was to establish norms for environmental protection and to curb some excesses of the productive sector. Thereafter, two important regulatory agencies were established in the most industrialised states: State Foundation of Basic Sanitation and Pollution Control (Companhia Ambiental do Estado de São Paulo – Cetesb), in São Paulo and State Foundation on Environmental Engineering (Fundação Estadual de Engenharia do Meio Ambiente – Feema) in Rio de Janeiro.

On the 31th of August of 1981, the National Environmental Policy was established. It intended to integrate government actions towards the creation of a National Environment System. This law represented an important change, however it was only definitely implemented by the 5th of October of 1988, when a new Constitutional Law was promulgated. It inserted an entire chapter (Chapter VI – article 225) devoted to the natural environment. It guarantees for all Brazilians the right to a balanced natural environment as a key point for a healthy quality of life. The government is responsible for defending and preserving the environment for current and future generations.

An important event happened in December of 1988, when Chico Mendes, the leader of a national union of rubber tappers, was murdered by ranchers opposed to his activism. They fought to stop the logging of the Amazon Rainforest to clear land for cattle ranching. In response to his murder, the Brazilian Institute of Renewable Natural Resources and the Environment (Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis – Ibama) was instituted by the government. The exploitation of the Amazon reflects the flawed regional policy response to errors of the military regime. Pressure for land redistribution in favour of peasants in eastern Brazil was deflated by promoting migration into the "empty" frontier region (AUTY, 1995). This is an environmentally destructive process which has been vigorously opposed by society.

In 1990, an Environment Secretariat (Semam) was established, which functioned directly under the President's office. In 1992, Semam was transformed into the Ministery of Natural Environment. In the same year, Brazil was host to the Earth Summit in Rio de Janeiro. The country made efforts to improve its image and environmental performance. The result has been two parallel processes, one of increased economic liberalisation and another of stricter environmental regulation. In 1998, law n° 9.605 established criminal penalities

for "activities and conduct against the natural environment". As pointed out by Jenkins (2001), there is no doubt that the environmental issue has moved up the policy agenda in Brazil.

Another event happened in 2000. Two massive oil spills which occurred in Brazil within six months focused international attention on the state oil company, Petrobras. A disastrous oil leak occurred at the Brazilian refinery near Curitiba in the southern state of Parana. It came only six months after an oil spill of more than one million litres which polluted Rio de Janeiro's picture-postcard Guanabara Bay (BBC News, 2001). Environmental pressure from stakeholders increased a lot, particularly from international investors and Brazilian society.

The company was severely penalised by the regulatory agencies. The cost of the cleaning operation and compensation for the fishermen had severely damaged both its corporate image and its balance sheet. Since them, Petrobras has continually invested in environmental, health and safety projects to become a benchmark in environmental and social responsibility.

A lot of the encouragement of environmental proactivity comes from big companies improving their supply chains. This is especially true for companies that export from Latin America, whether they are multinationals or local companies (SCHMIDHEINY, 2006; OLIVEIRA, 2006). For instance, Petrobras, Fiat and General Motors have established a programme to their supplier to implement environmental management systems (EMS). Nowadays, more than 2000 companies established in Brazil have implemented an EMS certified by ISO 14001 (ISO, 2005).

In this context, the environmental proactivity of Brazilian companies addresses important research question not adequately treated in management literature and the phenomenon is neither well defined nor empirically developed. We have therefore conducted a qualitative exploration guided by the following question:

What were the critical contextual factors that influenced the environmental proactivity of Brazilian companies?

6 METHODOLOGY

6.1 ANALYTICAL TECHNIQUES APPLIED

As Yin (2003) noted, exploratory research allows an investigator to examine a phenomenon and develop suggestive ideas in a flexible way. Case studies represent a good vehicle to conduct exploratory research, because preliminary models that purport to include essential concepts and relationships can be subjected to in-depth investigation and modified as necessary to fit the empirical reality.

In the interviews, key actors are asked about their company's features, market structure, environmental management adopted and stakeholder's pressures and demands. The first part is dedicated to the structure of industry with questions about globalization's influence on business and its competitive advantages and market trends. The subsequent questions reflect the environmental proactivity of a company within its business system (planning and organizations, operational and communications practices). Examples of questions include: environmental policies; achievement of planned objectives/targets; environmental expenditure; emergency response activities; audits conducted and environmental training programmes implemented. We also ask about the compliance programs of contractors, including pollution abatement controls and measures, research & development and environmental reports. The importance attached to the stakeholders was investigated by asking managers about the impact of various stakeholders on decisions related to environmental proactivity.

During all of the interviews, notes were taken; these are analysed, together with oberservations of the information the company presents in its website and environmental report, and evidence from news clippings and other reports in the mass media. This procedure is important because interviews can be subject to problems of bias, poor recall and inaccurate articulation (YIN, 2003).

6.2 DATA COLLECTION ACTIVITIES

Industries were chosen based on their ownership (privatised and private run) and environmental risks (high or low) so that they could be compared among themselves. Brazilian petrochemical, steel, textile and shoe industries were distinguished according to the structural reform, and which have implications for the strategy adopted.

The criteria of technology similarity and size plant were used to select the firms for in-depth personal interviews and site visits. The sample was specifically selected. In the first phase, a pilot study was conducted in three large textile firms, located in Ceará state, to establish the suitability of the the protocol used to collect the data. Firstly, a reviewed version was applied within the textile sector. Subsequent to this, studies with steel and petrochemical firms were undertaken concurrently, and later on shoe firms were interviewed. Each interview contains detailed differences according to the relative industrial peculiarities.

The data were collected from ten different Brazilian states which allow identification of the determinant factors of environmental proactivity. Table 1 summarises the main characteristics of the firms studied.

TABLE 1

FIRMS CHARACTERISTICS

SECTOR	SIZE	MARKET LOCATION (%)		PROCESS DESCRIPTION
		DOMESTIC	INTERNATIONAL	
Petrochemical	Large	85	15	1St Generation & 2St Generation
		95	5	2St Generation
		50	50	2nd and 3St Generation
		50	50	2St Generation
		68	32	Oil exploration & refinery
		100	–	Refinary
Steel	Large	80	20	Integrated
		77	23	Integrated
		82	18	Mini mill
		70	30	Integrated
		51	49	Integrated
		93	7	Mini mill
Textile	Small	100	–	Weaving
		100	–	Weaving
		100	–	Spinning
	Medium	80	20	Weaving
		100	–	Spinning/Weaving
		80	20	Spinning
		100	–	Spinning/Weaving
		100	–	Spinning/Weaving
		100	–	Weaving
		100	–	Spinning

(continue)

Table 1 (Conclusion)

FIRMS CHARACTERISTICS

SECTOR	SIZE	MARKET LOCATION (%)		PROCESS DESCRIPTION
		DOMESTIC	INTERNATIONAL	
Textile	Large	100	–	Spinning
		50	50	Spinning/Weaving/Finishing
		60	40	Spinning/Weaving/Finishing
		70	30	Spinning
		80	20	Spinning/Weaving/Finishing
		100	–	Spinning
		90	10	Spinning/Weaving/Finishing
Shoe	Large	10	90	Tanning and footwear
		79	21	Footwear
		95	5	Footwear
	Medium	100	0	Footwear

Source: Made by authors.

The survey was conducted with seventeen textile firms located in the states of Ceará (9), Pernambuco (4), Rio Grande do Norte (3) and Paraíba (1) states. All the textile firms were concentrated in North Eastern Brazil which is one of the most important textile producing regions of the country.

The petrochemical survey was conducted in six firms and involved petrochemical firms installed in two major petrochemical complexes; Bahia (3) and Rio Grande do Sul (1) states, followed by firms established in Ceará (1) and Rio de Janeiro (1) states. The steel firms surveyed were in South Eastern Brazil, which means that six steel companies were located in São Paulo (2), Minas Gerais (2), Espírito Santo (1) and Rio Grande do Sul (1) states. The shoe industries were visited in Rio Grande do Sul (3), with one in Ceará state.

It is important to mention that the effectiveness of environmental enforcement varies among Brazilian states. Socio and environmental priorities can also be just as different depending on whether the companies are located in South Eastern (Rio Grande do Sul, São Paulo, Espírito Santo, Rio de Janeiro and Minas

Gerais states) or North Eastern Brazil (Ceará, Pernambuco, Paraíba, Rio Grande do Norte and Bahia states).

The phase of data collection occured in 2006 and interviews totalled approximately 120 hours. The executives interviewed in each company included CEO or a member of top management and line/operations managers.

6.3 FINDINGS

Structural reform effects were different in each industry. Petrochemical companies tended to verticalise their activities and to acquire others throughout the petrochemical complex. They also realised their competitiveness as a function of investment in technology, and the necessity of developing a focus strategy. Interviewees affirmed that the competitive advantage is the integration of their supply chain. They invested substantially in plant modernisation and product/process quality improvement programmes in response to increased competition. Petrochemical companies have tailored their production to maximize their utilisation of capacity installed, which enables reduced production costs. These companies became more market-oriented and were ever conscious of a critical media.

Meanwhile, steel companies were optimistic with the expansion of the internal market, and the consolidation of their position in external markets. They appreciated that their competitive advantages are in production costs, supply chain integration, and product differentiation through technology. Interviewees reported a reduction in the number of employees following privatisation, with changes in the organisational structure. Parallel to the privatisation process, a set of institutional reforms stimulated new investment in order to modernise their facilities, increase productivity, and protect the natural environment.

Brazilian textile and shoe manufactures have been caught in a squeeze. Foreign producers provide quality and quantity which are competitive with domestic producers, but at lower prices. Five companies, because of this influence, forecast that the market would contract and seven that it would stagnate. Only four textile companies were optimistic, believing that the market trend is towards expansion. Interviewees were concerned with Chinese production costs, mainly due to cheap labour, which severely affects Brazilian industrial activities. Companies had demanded support from public policies, and most of these cut their costs stringently. On the other hand, few companies were investing in order to improve product quality, and were implementing a differentiation strategy as an alternative to increasing their participation in the textile chain.

Shoe companies are more optimistic, with just one company forecasting that the market would contract. This company operates domestically and produces low-quality products, whereas others operate internationally with specia-

lised products. Their competitive advantage is related to their ability to produce designs and cater to tastes and preferences in addition to cost effectiveness.

Interviewees for all four groups agreed that the "Plano Real" had controlled inflation and promoted stability necessary for the strategy of financing growing trade and current account deficits, through short-term capital inflows. During the past five years, most of the companies studied had increased their production capacity, whereas three textile companies and one shoe firm had reduced theirs. All companies had affirmed that Brazilian economic ambient conditions are negligible in the light of high tax and interest rates, which reduce investment possibilities. They agreed that international trade and investments are exposing Brazilian firms to a wider range of opportunities and challenges.

6.4 SIMILARITY AND DIFFERENCES IN ENVIRONMENTAL PROACTIVITY OF BRAZILIAN PETROCHEMICAL AND STEEL *VERSUS* TEXTILE AND SHOE COMPANIES

There are significant differences in environmental proactivity amongst industrial sectors. To measure the managerial characteristics of the companies, respondents were asked about the following topics: the human resource allocation, the environmental policy component that is currently installed in their companies, the environmental training and development programme implemented, along with the reasons for environmental investments and its resource allocation (see Table 2). Companies were also questioned about whether they had an environmental management system, and about their environmental requirements for purschasing and contracts, emergency response plans and environmental audit.

Most petrochemical and steel companies had a designated environmental manager. These companies established the organisation´s environmental policy and had implemented an environmental training programme. Such a policy forms the basis upon which the organisation sets its objectives, targets and programmes. The key environmental concerns for petrochemical and steel companies are: sustainable development, enhancing a positive image and reducing waste. The petrochemical and steel firms had to prove reasonable care in their operations to offset criticism from a relatively well-organised social movement favoured by the media. The employees are also committed to protect the environment because of the training programme.

ISO 14001 had been implemented by all petrochemical and steel firms. In order to implement their environmental management systems, companies must identify environmental aspects and impacts, run environmental audits and establish procedures and plans for activation in emergency situations.

Managers were asked about their knowledge of environmental laws. Petrochemical and steel companies have a complete understanding of Brazilian environmental laws. However, there are significant differences in environmental investments by the companies. Steel and petrochemical interviewees argued that is hard to define precisely the amount of environmental investment because it is integrated into the industrial facilities. The percentage of environmental investments was significantly less in textile companies than in the others firms.

Table 2

PLANNING AND ORGANISATIONAL PRACTICES

PLANNING AND ORGANISATIONAL PRACTICES		INDUSTRIES			
		PETROCHEMICAL	STEEL	TEXTILE	SHOE
Indicator	Answer	N = 6	N = 6	N = 17	N = 4
Human resource allocation	Environmental manager	5	5	4	1
	No specific environmental manager representative	1	1	13	3
Environmental policy	No	–	–	13	2
	Yes	6	6	4	2
Environmental training and development programme	Yes	6	6	2	2
	In process of implementation	–	–	10	2
	No	–	–	5	–
Reasons for environmental investments	After penalty	–	–	–	1
	To attempt the environmental law	2	–	13	4
	Internal projects	3	3	5	3
	Environmental objectives and targets	5	5	6	1
	To attempt the comunity pressure	–	–	1	–

(continue)

Table 2 (Conclusion)

PLANNING AND ORGANISATIONAL PRACTICES

PLANNING AND ORGANISATIONAL PRACTICES		INDUSTRIES			
		PETROCHEMICAL	STEEL	TEXTILE	SHOE
Annual financial resource allocation (2005)	> US$50.000,00	–	–	12	–
	US$50.000,00 – 250.000,00	1	–	4	1
	US$250.000,00 – 500.000,00	–	–	1	–
	US$500.000,00 – 1.000.000,00	1	–	–	–
	< US$ 1.000.000,00	–	5	–	–
	No answer	4	1	–	3
Percentages of environmental investments (2005)	0 - 1%	1	3	12	1
	1 - 2%	1	2	5	–
	2 - 5%	–	–	–	–
	5 - 10%	–	–	–	–
	No answer	4	1	–	3
Environmental management system	Certified by ISO 14001	6	6	3	1
	In process of implementation	–	–	3	1
	In planning	–	–	1	1
	No plan	–	–	10	1
Purschasing and contracts requirements	Yes	4	6	2	3
	No	2	–	15	1
Emergency response plan	Yes	6	6	14	–
	No	–	–	3	4
Environmental audit	Yes	6	6	8	2
	No	–	–	9	2

Source: Made by authors.

On the other hand, most textile and shoe companies had not implemented any environmental policy. In general, they had not appointed an environmental manager. The textile companies are in the process of implementing an environmental training programme. Just three textile companies and one shoe company had implemented an environmental management system certified by ISO 14001. The textile firms are about to defined environmental purchasing and contracts requirements. These seem to be more advanced in shoe firms.

All companies are developing technology to optimise the process and differentiate their products (as seen in Table 3). Petrochemical and steel companies usually have their own Research Centre, but most companies buy technology, or have an international partner responsible for transferring it. Textile and shoe firms use technology to reduce operational costs and design new products. However, two textile firms are developing a green label in response to the customers' demands, seeing this as a marketing opportunity.

Table 3

OPERATIONAL PRACTICES

OPERATIONAL PRACTICES		INDUSTRIES			
		PETROCHEMICAL	STEEL	TEXTILE	SHOE
INDICATOR	ANSWER	N = 6	N = 6	N = 17	N = 4
Research and development for products and process	No	–	–	3	1
	Yes	6	6	14	3
R&D practices	University partnership	2	6	2	2
	Customers partnership	2	3	11	1
	Technological centre	3	4	1	–
Type of research	Product differentiation	2	6	14	2
	New materials	2	5	–	3
	Reduce the consumption of energy and/or materials	2	5	7	1
	New materials	2	5	–	3
	Process optimisation	2	5	–	4

(continue)

Table 3 (Conclusion)

OPERATIONAL PRACTICES

OPERATIONAL PRACTICES		INDUSTRIES			
		PETROCHEMICAL	STEEL	TEXTILE	SHOE
INDICATOR	ANSWER	N = 6	N = 6	N = 17	N = 4
Type of research	Reduce operational costs	2	5	11	4
	Reduce environmental impacts	2	3	1	2
	Green label	–	–	2	–
Measure and monitoring systems	Done	6	6	7	3
	In process of	–	–	–	1
	Not done	–	–	10	–
Operational controls	Wastewater treatment	4	6	7	2
	Air pollution controls	5	5	6	1
	Steam, oil, nature gas, GLP conservation	2	4	–	2
	Solid waste management	4	6	6	2
	Eletric energy conservation	3	4	7	2
	Water conservation	2	3	–	–

Source: Made by authors.

Petrochemical and steel firms are highly pollutive and take more aggressive safeguards to prevent or reduce environmental damage establishing restricted operational controls. All petrochemical and steel firms establish procedures to monitor and measure environmental performance indicators. These companies have also defined operational controls to deal with wastewater, air emissions and solid wastes. Textile companies are less developed in terms of measuring and monitoring, and their main operational controls involve wastewater and electric energy, the latter representing the most important production cost.

As pointed out by Benito-Gonzalez and Benito-Gonzalez (2006), communication practices are implemented precisely to cultivate the links with the social and economic environment, and could, therefore, be used to good advantage. All

of the petrochemical and five of the steel firms had published their environmental report and have procedures to receive stakeholder demands. Three textile and two shoe companies had also divulged their environmental performance. For the other companies, it is not important to measure environmental performance: they have other priorites, and the regulatory agency has never demanded this information from them.

7 DRIVING FORCES TO ENVIRONMENTAL PROACTIVITY

It is clear that environmental regulation has been one of the key factor driving Brazilian firms to improve their environmental performance. However, besides the enforcement on firms to deal with environmental problems, the pressure increments appear to be associated with the largest set of stakeholders perceived as important to influence their environmental strategic decisions. The analysis also reveals that all companies attach importance primarily to shareholders and domestic and international customers. In addition, textile and shoe companies appear to focus minimally on community and NGOs.

All companies' customers are mainly concerned with price, delivery time and quality. However, interviewees at steel and petrochemical firms have affirmed that, without quality and environmental management system, certified by ISO 9001 and ISO 14001, is impossible to even offer their products on the international market. Better environmental management practices may thus be associated with efforts to activate the customer's claims on the firms. Textile retailers are sending conflicting signals back up the supply chain as they try to manage and balance "green" and business interests.

Petrochemical companies appeared to attach even more importance to domestic regulatory requirements and this is perceived as stricter enforcement. On the other hand, interviewees of steel companies commented that when they were state run the regulatory agency did not have substantial enforcement. However, this relationship changed a lot after privatisation. Petrochemical and steel companies might choose to 'self-regulate' their environmental performance by selecting higher performance levels than required by local governments. Before starting up the facilities, these companies had all the pollution controls in place, as defined by the regulators and government agencies, installed as inseparable equipment that comes with the techonolgy transferred.

The reasons for implementing an environmental management system (EMS) were also discussed. All companies tend to define their EMS in terms of

meeting legal compliance. Companies should also be aiming to transmit a good image as a responsible and safety conscious company. As a result, companies improve both their operational control and their image.

The textile companies merley fulfill the minimum legal requirements of enforcement agencies. These companies are predominantly small and medium sized, and operate mainly domestically. The textile manufacters are typically spinning and weaving. Most of textile firms do not understand the importance of managing stakeholder environmental demand. Nonetheless, international customer exerts a higher pressure on large textile and shoe industries.

Petrochemical and steel companies operate within international groups, owing to corporate size and experience. They have been submitted to great pressure and defend the convenience of developing proactive environmental initiatives to mitigate such pressure.

8 CONCLUSION

Market characteristics and industry structure in developing economies, like Brazil's, have changed substantially in the last decades. The impact of the Washington Consensus on the course of globalization has been enormous, creating an environment in which foreign investment, global trade, and the removal of tariff barriers are all part of the "Plano Real" mainstream policy. It has also set the stage for stability and development.

At the same time, government and client demands have become more influential in promoting stronger environmental behaviour. Companies having international markets appeared to have more sophisticated environmental strategies than domestically oriented firms. The key stakeholders may vary substantially depending on the environmental strategy chosen, and the relevant institutional context faced by the firm.

The privatised steel and petrochemical companies represent the most important industrial activity for the local economy, where stakeholder (government, community, employees and media) demands are higher for all of them. After privatisation, regulatory agencies increased the environmental demands and enforcement. Also, these companies had to deal with and solve passive environmental problems. These companies are now oriented by the market, so it is important to transmit a responsible and safety conscious image to society, and improve investor confidence.

On the other hand, the private steel and petrochemical companies are always oriented by the market. They operate under pressure of the international market

and shareholders in order to have a good environmental image and, hence, performance. Environmental management is part of the core business. External drivers are third party assurance and recognition, market access, regulatory relief, improved investor confidence and so enhance public image and community relations. As pointed out by one interviewee "... there are dangers/risks inherent in almost every process, so if we want to be benchmarking in petrochemical industry, we must be benchmarking in environmental and health and safety process".

The textile and shoe companies define their strategy as achieving low cost to compete against Asia's products. They are typically small and medium sized firms who operate domestically. These firms cannot afford to invest a large amount of money over a number of years in order to improve environmental performance of their products and process. However, they attempt to meet the legal requirements of enforcement agencies within a limited range of organisational compatibilities.

These companies do not realise the importance of managing stakeholder environmental demands and faced a limited interest by customers in "green" products. Environmental management system is not a priority for them, even in the long run. These companies have located their production facilities in North Eastern Brazil and represent an important source of employment for nearby towns. Social pressure is lower and there are fewer motives for them to develop environmental strategies.

Large textile and shoe companies, having international markets, appear to have more sophisticated environmental strategies than domestically oriented firms. Companies develop green label/products to supply markets more sensitive to environmental issues, such as Europe, and firms have reviewed their processes to obtain cost advantages.

This study is not without limitations. First, it relies on self-reported measures provided by company managers, but it also attempts to confirm their environmental proactivity asking for evidence, analyse documents and observe the environmental performance by site visit.

In spite of these limitations, the paper sheds light on the multifaceted aspects of structural reform in Brazil, which has an extraordinary social, cultural and ecological diversity. One response to disquiet at the imposition of environmental proactivity from overseas has been the creation of a relevant agenda. Leading companies embrace the environmental proactivity to develop the skills for effective relationships with stakeholders who create social stability and favourable business environment. In developing countries, companies should to be seem as part of the solution rather than as a cause.

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