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Brazil's Place in a Competitive Global Economy: The Role of the Central Government

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I. Introduction

The last decade was characterized by an unprecedented series of changes and advances in international trade and international relations among countries. The so-called process of globalization – *the increasing economic integration of a national economy with the rest of the world*¹ - has been present in the world for millennia. But it has never been so intense and so determinant of a nation's standard of living as it is nowadays. The technological advances in telecommunication and transportation means have hardened competition among nations and the traditional barriers are not sufficient to protect national industries.

In a free competitive world, it is up to firms to produce their goods in the most competitive way and trade it among different markets. Competitiveness became the key to succeeding in such a belligerent scenario.

Concomitantly, there has been a lot of academic discussion about the right role that the government should play to assure and create a national environment that fosters the development of competitiveness in its industries. Basically, there is a consensus that the government should create and develop the basic factors that allow a sustainable development of competitiveness in its country. On one hand, there is no argument against the role of government, in improving education and health, developing basic science & technology, providing modern infrastructure, giving the tools for the existence of a stable capital market, and the creation of other basic factors. But, on the other hand, there are a lot of controversies when the discussion enters the gray area of industrial policies. Government policies that affect production costs of firms and demand in order to artificially favor specific industries or segment of industries have been significantly criticized, despite the fact that mostly governments adopt some of these policies.

The Brazilian government has become aware of its role in creating the favorable environment to develop national competitiveness. Nowadays, two big projects have taken the governmental agenda on this matter: the policy reforms to eliminate or at least reduce the systemic costs (Cost Brazil) and the Fora of Competitiveness, bringing together the

¹ As defined by Dr. Jeffrey Sachs on his speech *Making Globalization Work*, at the George Washington University, in January 25, 2000.

government and productive sector on an attempt to establish goals and actions to foster national competitiveness.

This paper provides an overview of the theories on international trade and highlights their most important concepts and explanations about differences of competitiveness among countries, as well as the indicators that measure competitiveness. Further, it examines the Brazilian current governmental efforts to eliminate the high systemic costs that burden its productive sector. Finally, to empirically analyze how those costs affect a productive chain, the textile and apparel chain is used to illustrate the difficulties caused by the so-called Cost Brazil and the demands and suggestions presented by the productive sector.

Obviously that a more profound analysis would need more time and more research on data, as well as a close contact with the productive sector. If competitiveness were viewed as a dynamic concept, this analysis would never be finished since there would be always the necessity of upgrading information.

II. Review of the Competitive Concepts and Theories

A. Concepts

A.1. Classical Theories

A.1.1. Adam Smith

The theory of comparative advantage contends that when a country specializes according to its comparative cost structure, it achieves an efficient allocation of resources and hence an increase in its real national income. International specialization would be simply a consequence of the division of labor – and therefore greater productivity – among nations. The theories and thoughts of Adam Smith are compiled in his most famous book *Wealth of Nations* (1776). Despite of the simplistic approach of how international trade works, the book represents a portrait of the so-new liberal ideas of the genesis of the industrialization era, and, until nowadays, it is praised by many “contemporary” economists as a foundation of the modern economy.

A.1.2. David Ricardo

Adam Smith recognized that a nation should employ its resources in a manner that would be advantageous. But it was David Ricardo that developed and refined the logical principles of comparative advantage in 1817². Although it was based on Smith’s theory, the Theory of Comparative Advantage is not only of historical interest. It demonstrates the fundamental insight that countries with different **relative** costs of production can benefit from trade. Ricardo put apart the monetary approach of the XVIII century and concentrated on the nonmonetary forces that determine international trade. His focus is on the allocation of resources, not on the balance of payments, which would be adjusted through changes in wages or in foreign exchange rates.

² Ricardo’s theory is explained in his book: *On the Principles of Political Economy and Taxation*.

Ricardo postulated that trade is based upon differences, between countries, in the relative productivity of labor in the production of goods. This proposition, although very simple, has been well sustained by many empirical examination since then.

His theory focused on the relative difference in labor productivity (output per hour) in producing wine and cloth in England and Portugal. In that model, even though Portugal was more productive than England in both wine and cloth, giving Portugal an absolute advantage in both products, its labor was relatively more productive in wine than cloth. Portugal had, therefore, a comparative advantage in wine and England, despite being less productive in both products, had a comparative advantage (lesser disadvantage) in cloth. According to that theory, even when a country has an absolute advantage in all products, it would be profitable for it to enter in the international trade and allocate its resources towards the product that presents a better advantage. International trade would be a positive-sum game, where one nation may gain more than another, but each one gains more than in a non-trade situation

However, Ricardo did not explain why technological differences exist. Furthermore, he did not take into account the different patterns of technological advances among countries. The immobility of factors of production across nations is also another flaw point in Ricardo's theory. It often restrains changes in wages and other factors that don't have an optimal mobility; limiting, therefore, the natural adjustment of the balance of payments as previewed by Ricardo.

A.2 Factor Endowment Theory

The concept of Competitive Advantage did not remained stagnated in the Ricardian theory. It has been refined and adapted to the modern environment by the late nineteenth and early twentieth century neo-classical economists, such as Edgeworths, Jevons, Marshall and Walras. These economists emphasized the importance of marginal vallues in determining conditions for economic equilibrium and optimization, fixing the foundations for modern microeconomics. In this neo-classical approach, the emphasis is on the marginal productivity and costs, in contrast to the classical approach of average values.

Recognizing that all factors of production can be inputs, two Swedish economists, Eli Heckscher and Bertil Ohlin, elaborated a theory of comparative advantage focused on factor proportions in the production of different products and countries. According to the H-O theory, the basic determinant of a nation's comparative advantage would be then the relative factor endowment – i.e., the nation's relative factor supplies of natural resources, labor and capital (inputs). A nation that is relatively abundant in one factor will have a competitive advantage in the production of factor-intensive products.

The ability to substitute one factor for another in the production process is a fundamental characteristic of the neo-classical production. Therefore, according to that school of thought, a nation should allocate its factors in order to achieve an optimum level of productivity. This theory recognizes the partial immobility of factors of production across nations – mainly labor. If labor cannot physically migrate from a country to another, it can migrate embodied in labor-intensive products through international trade.

Nevertheless, the theory does not take into account that a nation's factors and comparative advantage are not static. Instead, it is dynamic, changing over time as new factors are developed and comparative advantage is acquired.

A.3. Product Cycle Theory

The factor endowments theory assumes that each country has access to the same technology. However, it has become obvious, particularly in the second half of the twentieth century, that technology is not static. Since the 1960s, the new theories of trade include the role of technology in creating new products and processes and influencing the international competitiveness of nations.

The Technology-Gap Theory – developed by Posner in 1961³ - was the first theory to include technology as a factor determining trade flows. It stated that new products and processes are continually being developed and, for a period of time, the nation that owns a particular invention or innovation will have a technological lead over other nations. That nation will be able to export the product that embodies the technology even if it may not have an apparent comparative advantage in terms of factor endowment. The advantage

³ For a more detailed explanation, see Posner, M. V. (1961), **International Trade and Technical Change**, Oxford Economic Papers, 13: 323-341.

occurs because the time it takes for the new good to be demanded in other countries – the demand gap – is less than the time it takes for the new technology to be spread to other countries – the imitation gap. The imitation gap will increase according to how protected the new technology is (patents), or based on the level of difficulty for learning how to apply it.

Trade will result therefore from disparities between nations in the rate and nature of innovation. Countries with a constant rate of innovation will tend to export technologically advanced goods to countries with a slower rate of innovation. The latter would specialize, on the other hand, in more standardized, labor-intensive goods. Nations with similar rates of innovation will also trade with each other, since the nature of innovation will differ among them. Posner also argued that technological leaders will always be in a favourable position to consolidate and extend their initial advantage. Innovations lead to further advances in technology and new innovations.

That Theory was further studied by Hirsch⁴ and Vernon⁵ in the late 1960s. Hirsch suggested that the development and initial production of new products requires large amount of skilled labor. Innovation is a result from R&D activities which are most intensive in countries relatively well endowed with highly skilled labor. Also, innovative products are better accepted in more developed markets. These considerations would suggest that developed countries are propense to achieve the fastest rates of innovation.

The Product Cycle Theory, developed by Vernon, assumes that generally firms in advanced countries have access to the same technological know-how, but the application of such knowledge requires entrepreneurs, who are not equally responsive to opportunities. That would be related to the existence of a sophisticated market to buy the new innovative products. Thus, high-technology products would be first produced in high-income countries where the opportunities for their development are more apparent. The new product would be differentiated by consumers from existing goods and it would give the producer a certain degree of monopoly power. In that first stage of the product cycle, the product requires relatively heavy R&D expenditures and highly skilled labor. Product

⁴ For a more detailed explanation, see Hirsch, S. (1967), **Location of Industry and International Competitiveness** (Oxford: Oxford University Press).

⁵ For a more detailed explanation, see Vernon, R. (1966), **International Investment and International Trade in the Product Cycle**, *Quarterly Journal of Economics*, 80: 190-207.

design is still being adapted, costs are high, and sales are low. The producers concentrate, therefore, on the home market where demand is less elastic. Countries with similar levels of income, as well as wealthiest individuals in developing countries, will soon demand and import the product.

In the second stage of the cycle (*growth*), as demand expands, the product becomes more standardized, making economies of scale available through mass production. Physical capital can replace human capital as the most intensively used factor of production. There could be an incentive to exploit overseas lower-cost locations if factor price differences are substantial. If the innovation can be easily imitated, production may move overseas even without foreign investments. As the use in physical capital in production rises, comparative advantage shifts away from the innovating country to other developed countries. The innovating country may even become an importer of the product.

At the third and final (*mature*) stage, the technology used in the production of the good becomes completely standardized. The importance of skilled labor in the production process is reduced and the price-elasticity of demand rises. Firms in the innovating country may establish factories in low-wage developing countries, and again, if the technology is available, the production may be displaced to developing countries even without foreign investments. Developing countries would become net exporters of the product. At the same time, developed countries would be on earlier stages of new product cycles.

This theory explains why countries in the North Hemisphere (developed countries) try to inhibit the diffusion of new technologies to developing countries. The protection of intellectual property rights has become one of the hottest issues in international negotiations. The developed world – mainly the European Union, the USA, and Japan – are really concerned about preventing products and processes developed domestically from being copied by other countries. In recent years, imitation, rather than overseas production and investment, has become the principal vehicle for the transfer of technology from the North to the South⁶. The developed countries argued that the protection of intellectual property rights should be an interest to developing countries as

well. Innovation generates knowledge that benefits the society as a whole. Without protection, firms would not have an incentive to invest in R&D. It is definitely a very controversial issue, and the economic theory does not support the arguments of the developed countries⁷.

A.4. Competition According to Porter

The Product Cycle model explains some changes in comparative advantage as the mix of factors required to produce a good varies over the life of a product. Comparative advantage changes as a country's factor endowment evolves over time. In essence, factors may be – and actually are – created.

Porter has gathered all those previous theories and models together to reach a new model where he introduces the dynamic process of creating and acquiring factor conditions by nations, in order to explain the determinants of a nation's competitiveness in our modern world.

A.4.1. The Competitive Advantage of Nations⁸

According to Porter, wealth would be a consequence of productivity and productivity lies in the national and regional environment to competition. Porter conducted a four-year study of ten competitive economies in the world and the results formed a base for his new theory. Porter identified the determinants of national advantage as the:

- Factor conditions: the nation's position in factors of production necessary to compete in a given industry.
- Demand conditions: the nature of home demand for the industry's product or service.
- Related and supporting industries: the presence or absence in the nation of supplier industries and related industries that are internationally competitive.

⁶ For a more detailed explanation, see Grossman, G. M., and Helpman, E. (1993), **Innovation and Growth in the Global Economy**, MIT Press, Cambridge, Mass.

⁷ For a more detailed explanation, see Brenton, P. (1997), **International Trade**.

⁸ Porter documented his researches in his book: **The Competitive Advantage of Nations (1990)**.

- Firm strategy, structure, and rivalry: the conditions in how companies are created, organized, and managed, as well as the nature of domestic rivalry.

These four determinants create a **diamond** that is a mutually reinforced system: *the effect of one determinant is contingent on the state of the others*⁹. In addition, there would be two additional variables that could affect the national competitiveness: chance and government.

The first determinant is the factor conditions. The neo-classical theory states that, since nations are endowed with different stocks of factors, it will tend to export goods that make intensive use of the factors it is well endowed. Porter went further on that explanation and affirmed that, in most industries, the most important factors to achieve competitive advantage are not inherited but are created through processes that differ across nations and industries. Porter even suggested that an abundance of inherited factors could undermine instead of enhance competitiveness, since it would not stimulate the creation and constant upgrade of factors. He grouped factors into categories: **human resources**; **physical resources**; **knowledge resources**; **capital resources**; and **infrastructure**. The competitive advantage would be a result of how efficiently and effectively those factors are used. He divided factors in two types:

- Basic factors: passively inherited factors – natural resources, climate, location, unskilled labour and debt capital – that are either unimportant to competitiveness or the advantage they provide is unsustainable.
- Advanced factors: created factors – modern communications infrastructure, highly educated personnel, technologies, etc – that are determinant to competitiveness. They are scarcer than basic factors since they need large and sustained investments. It is important to stress that they are often built upon existing basic factors. Therefore, basic factors, despite not being a sustainable advantage, must be of sufficient quantity and quality to allow the development of related advanced factors.

The second determinant is the home demand conditions. It shapes the rate and character of improvement and innovation in a nation. There are three significant attributes of that determinant:

⁹ See Porter (1990), pg. 72.

- Composition: nations gain competitive advantage in industries or segments where *home demand gives local firms a clearer or earlier picture of buyer needs than foreign rivals can have*. Also, if *home buyers pressure local firms to innovate faster and achieve more sophisticated competitive advantage compared to foreign rivals*¹⁰ (sophisticated and demanding buyers).
- Demand size and growth: large home market size can be a determinant factor to achieve competitive advantage in industries where there are economies of scale or learning.
- Internationalization of domestic demand: the existence of mobile or multinational local buyers and the influences of domestic needs and desires over the desires of foreign buyers contribute to the internationalization of domestic products and the creation of foreign demand for national products.

The third determinant is the presence of supplier or related industries that are internationally competitive. Internationally competitive supplier industries create advantages in all links of the productive chain. Firstly, they allow an efficient, early, and sometimes preferential access to modern inputs. Also, they provide easier coordination inside the productive chain. But the most important benefit is that they contribute to innovative processes throughout all the links of the productive chain. Similarly, internationally competitive related industries (complementary products) provide opportunities for information flow and technical interchange, raising the *likelihood that new possibilities in the industry could be perceived*¹¹.

The fourth determinant is the firm strategy, structure, and rivalry in a nation. The national context affects the way firms are managed and compete internationally. *Nations will tend to succeed in industries where the management practices and modes of organization favored by the national environment are well suited to the industries' sources of competitive advantage*¹². Porter stresses also the importance of national competition to the development of a high-standard competitive industry in a country. Domestic rivalry is much more important to rivalry with foreign competitors since it creates constant pressure among national firms to improve and innovate both in production

¹⁰ See Porter (1990), pg. 86.

¹¹ See Porter (1990), pg. 106.

processes and technologies. It was observed that even in countries with small markets, nations with a leading world position have many strong local rivals. *Domestic rivalry not only creates pressure to innovate but to innovate in ways to upgrade the competitive advantage of a nation*¹³.

Finally, there are two additional variables that affect a nation's international competitiveness. **Chance** would be all *the occurrences that have little to do with circumstances in a nation and are often outside the power of a firm – and a government – to influence*¹⁴ (invention, major technologies discontinuities, discontinuities in input costs, shifts in exchange rates, surges of demand, political decisions by foreign government, wars, among others). They create discontinuities that allow shifts in competitive positions and can nullify the advantages of established competitors. **Government**, on the other hand, plays a decisive role in influencing the four determinants either positively or negatively. Government can change local demand conditions through its purchases, subsidies, setting standards and regulations, among others. Despite the fact of being tempted to abuse the use of government intervention, its role must be partial on creating competitiveness. It will probably fail if it is the only source of competitiveness to its firms.

One of the pillars of Porter's theory is the dynamic system generated within the diamond. Each determinant influences the others, fostering competitive advantage in an industry and helping to create and upgrade a nation's factors.

A.4.2. *The Theory of Clusters*

The study of the dynamics and interaction among the determinants made Porter to go further in his theory and study how the diamond promotes the clustering of competitive industries. A cluster would be a *geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities*¹⁵.

¹² See Porter (1990), pg. 108.

¹³ See Porter (1990), pg. 119.

¹⁴ See Porter (1990), pg. 124.

¹⁵ See Porter, Michael E. (1998), **On Competition**, (Boston, MA: The Harvard Business School Publishing), pg. 197-271.

The reasons for clustering would be a result of the systemic characteristics generated by the determinants. One competitive industry or firm helps to create another in a *mutually reinforcing process*. Competitive industries are generally most sophisticated buyers and require sophisticated inputs, fostering competitive advantage in supplier and related industries. Once a cluster is formed, the whole group of industries become mutually supporting and benefits flow in all directions. *A cluster also magnifies and accelerates the process of factor creation. As clusters develop, resources in the economy flow towards them and away from isolated industries.*

Porter believes that the role of government at the cluster level should be to reinforce and build on established and emerging clusters, rather than attempt to create entirely new ones. Most clusters emerge independently of government actions and the facts that determine it should outcome of the market. The government therefore should recognize the presence of a cluster and then remove the obstacles and constraints, as well as eliminate inefficiencies, which impede its productivity and innovation. According to him, it should not be confused with some traditional actions of industrial policy – protection of infant industries, subsidies, suspension of internal competition, etc. *Cluster theory emphasizes not market share but dynamic improvement.*

B. Indicators of Competitiveness

The Organization for Economic Cooperation and Development defines competitiveness as *the degree to which countries can produce goods and services that meet the test of international markets while expanding real incomes over the long term*¹⁶. But defining competitiveness is a much easier duty than actually measuring it. The simplest and most generic way is to measure GDP per capita of population, assuming that if GDP per capita is rising relative to other countries it means that the economy is becoming more competitive. However, it is possible to argue that in many times that relation is not true.

¹⁶ See Article by Brown, Kevin: **Finding a Measure for the Unmeasurable** in the London Edition of The Financial Times (12/29/2000).

In order to try to accurately measure competitiveness, many models have been created and many indicators have been analyzed. The State of Massachusetts developed a model that has been improved and detailed by the UK government¹⁷. That model differentiates the indicators in the four main areas illustrated in the following table.

Table 1
List of Indicators – UK/State of Massachusetts Model

- 1. Business Environment**
 - 1.1. Macroeconomic Environment**
Macroeconomic Volatility – Growth, Inflation, S-T Interest Rates, Exchange Rates
 - 1.2. Competition**
Openness to Trade and Foreign Investment
Prices
 - 1.3. Labor Market**
Unemployment
Diversity of Employment Opportunities
Industrial Action
Labor Market Regulation
 - 1.4. Business Perception of Institutions**
Business Perception of the Institutional and Political Environment
 - 1.5. Quality of Life**
Sustainable Development Indicators
- 2. Resources**
 - 2.1. Human Capital**
Adult Literacy and Numeracy
National Learning Targets
 - 2.2. Physical Capital**
Business Investment Per Worker
Government Investment Per Capita
 - 2.3. Finance**
Venture Capital
Second Tier Markets
Stock Market Size and Turnover
 - 2.4. Information and Communication Technology (ICT)**
Business Uptake and Use of ICT
ICT Understanding in Companies
E-Commerce
 - 2.5. Science and Technology**
Publications and Citations of a Nation’s Research in Academic Journals
Government Expenditure on R&D Per Worker
Business Expenditure on R&D Per Worker

¹⁷ See the **UK Competitiveness Indicators 1999**, published by the Department of Trade and Industry of United Kingdom.

3. Innovation Process

3.1. **Technology Commercialization**

- Business Expenditure on Innovation
- Nation's Patent Performance
- Proportion of Firms that Innovate
- Share of Sales from New or Improved Products

3.2. **Receptiveness to Foreign Ideas**

- Internationalization of R&D
- Technological Alliances between Firms

3.3. **Knowledge Transfer**

- Sources of Information for Innovation
- Joint Publishing by Universities and Industries
- University Spin-outs

3.4. **Entrepreneurship**

- Entry and Exit Rates
- Fast Growing Firms
- Attitudes to Entrepreneurship

4. Results

4.1. **Output**

- GDP Per Capita

4.2. **Productivity**

- Output Per Worker and Per Hour

4.3. **Employment**

- Employment Rate

4.4. **Specialization in Trade**

- Trade Balance in Specific Industries

4.5. **Composition of the Economy**

- Share of Output in Specific Industries

Source: Department of Trade and Industry (DTI/UK)

The UK government published in December of 1999 its first annual UK Competitiveness Indicators compendium. The Blair administration intends to use that publication to monitor the progress of the UK economy against the world's leading economies and to help the government – as well as the firms – to design policies that narrow the gap in productivity and living standards with the other world's main economies. It is a very interesting and important initiative that should be followed by other countries, specifically Brazil. It will allow comparing in a broad sense the achievements in competitiveness throughout the years.

In Brazil, the IBGE (Instituto Brasileiro de Geografia e Estatística) collects and publishes many indicators. But, in order to measure competitiveness, the mostly used indicators are those that measure the business environment and the results (Market

Share, Growth on Productivity and Employment, Labor Productivity, Trade Balance, Inflation, Exchange Rates, Labor Costs, and Investments). It lacks a closer attention to other indicators, such as the human capital development and investments on technology.

III. Brazilian Governmental Efforts and Actions to Improve the Nation's Productive Competitiveness

A. Systemic Costs

When analyzing the competitiveness of a company or a productive chain, there are three different levels of cost that should be taken into account:

- Managerial Cost, through which are considered all the variables controlled by the company – price, quality, innovation, marketing, etc. – and their comparison to the best practices in the market;
- Structural Cost, through which are considered the companies' external diseconomies, but internal to the industry or chain – market size, technology available, scale of production, competition, etc.;
- Systemic Cost, through which are considered the industry external diseconomies – the macroeconomic policies adopted in a country that directly affect the general performance of a company or chain.

The systemic costs represent the sources of inefficiencies and distortions that jam the domestic production competitiveness and the internal and external investment attractiveness. In Brazil, these inefficiencies became more visible with the economy openness in last decade.

Since Brazil started opening its economy and internal market, and consequently becoming part of a globalized world, the adoption of reforms and measures to reduce and even eliminate the systemic costs has become an urgent subject in the national agenda. Once exposed to international competition, the private sector had to change and modernize its managerial practices in order to survive in a world of intense rivalry. Costs became a fundamental issue in order to achieve international competitiveness and to survive in the national market as well.

Since then, many inefficient and non-competitive companies have shut down. But, on the other hand, many of them survived and have become stronger and much more efficient than ever. Some of these companies reached remarkable standards of

productivity and can compete worldwide. Nevertheless, they soon realized that there were some costs that were out of their control. The elimination of the so-called Cost Brazil became part of the agenda in almost every meeting between the private and public sector in Brazil. Commissions have been created, groups have been formed, all of them to study and to propose suggestions to the Government on its intent to create a favorable environment that stimulates an increase on the national competitiveness level. The private sector classified the Cost Brazil (expression that comprises all the systemic costs faced by the Brazilian productive sector) in six types:

A.1. The Fiscal System

A substantial number of taxes, many aliquots, and a diversity of exemptions, deductions and bases that create an extensive and complex fiscal legislation characterize the Brazilian fiscal system. This complexity requires most of the times that the companies commit a huge department of its structure to deal with the accomplishment of all their fiscal obligations. All these extra administrative costs increase the managerial costs of the company, reducing its competitiveness against foreign companies.

Another characteristic of the Brazilian fiscal system is the existence of cumulative cascade taxes. The cascade taxes – taxes that are charged in every stage of the productive process – burdens the competitiveness of the Brazilian products both nationally and internationally and discourage investments in the final links of the productive chains. The Government has made efforts to simplify the fiscal system for the micro and small companies. But, again, all this complexity also disincentives the companies to grow bigger.

The fiscal reform should be, according to the private sector, the main priority of the Government to stimulate the Brazilian international competitiveness. The Government is aware about the necessity of changes in its fiscal system. Despite of this, and due to the fact that it will be necessary to change the Brazilian Constitution, the executive and the legislative branches have not agreed on a new fiscal system. The legislative defends populist positions of reducing taxes and decentralizing the levies. The Ministry of Finance is, on the other hand, concerned with keeping a balanced budget and would not support changes that would threat the current level of revenues. Unfortunately, due to the

municipal elections of 2000, this issue has been put apart for both the executive and legislative branches. Therefore, the Brazilian society will have to wait at least until 2002 to welcome a new fiscal system.

A.2. The Social Duties and the Labor Legislation

The Brazilian business sector complains that the rigidity of the labor legislation, along with the high social duties over the companies' payment sheet – many of them regulated by the Constitution itself – reduce the country's competitiveness and discourage the hiring of a formal workforce. According to the business sector, the labor relations should be based on a case-to-case negotiation system. The Constitution goes against the international trend of free negotiations, therefore increasing the production costs in Brazil.

Although the business sector may be right about the rigidity of the labor legislation, this issue is very controversial. Most of those duties are in fact indirect wages that complement very low wages paid to the workforce. Their reduction would probably be compensated by a real increase on wages. According to the World Bank¹⁸, the benefits of a reduction on social duties would be much smaller than the business sector states (a 50% reduction on the social duties would decrease the production costs, in average, in less than 4%).

Another controversial point in this issue is the existence of a Labor Court in Brazil. Lately, that segment of the Judiciary branch has been an object of discussion by the Brazilian society. The cost for the national budget, the real utility for the society and the several cases of corruption inside its structure have made the Labor Court and its judges very unpopular in Brazil. But, one more time, it would be necessary to change the Constitution to make this Judiciary power extinct.

¹⁸ See the **World Bank Report # 15663-BR** (1996): The Cost Brazil Since 1990-92

A.3. The Lack of a Modern and Efficient Infrastructure

An appropriate infrastructure is a decisive factor to incite productivity and competitiveness in a nation. There is no doubt that more suitable telecommunication, transportation and energy systems in Brazil would allow its productive sector to improve its output with lower costs, therefore increasing the country's international competitiveness.

Until recently, most of the infrastructure services in Brazil were governmental monopolies. The governmental investments in infrastructure during the last decades were far less than the necessities of economic expansion of the country. According to Porter¹⁹, the Government should play a decisive role in the development of a country's factor conditions. As a monopoly owner, the Brazilian government was responsible not only by encouraging the development of advanced transportation logistics, state-of-the-art telecommunication networks, and advanced and accessible energy, but to carry out the investments as well. A mix of several factors – bad administration of government companies, lack of future planning, bad use of public money, among others – made that the obsolescence of the Brazilian infrastructure became a burden to the productive sector. It is true that the continuous crisis that took place in the 80s –oil shocks, debt crisis, inflation, etc. – affected the Brazilian economy so much that the situation was only aggravated. But, on the other hand, it must be recalled that there were investments in infrastructure. Unfortunately, many of them were characterized by bad planning and hidden corruption scandals.

Since 1995, Brazil has changed its legislation in order to allow the privatization of those public monopolies and the creation of a competitive environment to the new private companies. The Government also has created regulatory agencies as a way to avoid anti-competitive behavior and to protect consumers from power abuses in prices and services rendered by those companies.

One controversial issue is the break of monopolies, market reserves, and the discrimination against foreign companies in the transportation service sector. The industrial sector complains that the costs of transportation, mainly due to the lack of internal competition in Brazil, reduce their international competitiveness. On the other

hand, as a matter of course, the transportation service sector – in all its segments – is totally against any openness of the market to foreign companies. The Brazilian government will definitely have to modify that sector in a near future due to the current several international negotiations on services. Some kind of openness must occur. But, according to the World Bank²⁰, the transportation sector in Brazil is not a cost problem. There would be already enough internal competition to keep prices down. The real problem would be the lack of alternatives to the highway/road transportation. An efficient railroad and fluvial transportation system, still according to the World Bank, would reduce the freight costs around 20%.

Despite the late efforts, there's a lag between Brazil and the developed countries of several years. Due to its size and the unbalanced distribution of population and wealth, the stages of development in infrastructure are quite different among the regions. The Government must now incite not only the continuous development of that factor of production, but also stimulate its creation and development in the less developed regions of the country. Modern infrastructures would play a major role on the effort of making the poorest regions of the country more competitive – or at least reduce the lag of competitiveness between the North/Northeast region and the South/Southeast region.

A.4. The Cost of Money and Financing

The high real interest rates and the lack of sufficient money available to long-term financing – mainly to the small and medium size businesses – have a considerable impact on the Brazilian productive structure. Besides discouraging new investments, the high interest rates unfavorably rebound on the production costs of the companies. Companies, in general, finance their working capital and their sales with resources raised in the financial market. Permanent high interest rates imply permanent high costs for the companies, restricting the supply of goods and services in the economy, as well as reducing the international competitiveness of the Brazilian products.

Many factors contribute to the high level of real interest rates in Brazil. First, there is a shortage of money in the economy. The country does not save enough to supply the

¹⁹ See Porter (1990), pg. 617-682.

²⁰ See the **World Bank Report # 15663-BR**.

demand of money to new capital investments. Second, the government imposes multiple taxes on financial operations (IOF, CPMF, IR). Third, due to the economic uncertainties and to an old habit inherited from the high inflation years, the spread charged by the financial sector on the money lent to small and medium sized companies is usually excessive. Fourth, the Brazilian public deficit and the constant necessity of the government to borrow money in the private sector contribute to raise the national interest rates. Finally, as a consequence of the current account imbalance of the Brazilian balance of payments, the Government has stimulated high real interest rates to attract foreign capital to the country and avoid the excessive reduction of the country's external reserves.

The government has put a lot of effort into reducing the real interest rates in Brazil. Besides the adjustment of the internal budget, there are many governmental initiatives to reduce the burden that it represents to the private sector on its international competitiveness. The PROEX – Program of Exports Financing – has, as one of its goals, to provide to the Brazilian exports a higher international competitiveness through the equalization of the national interest rates to the international ones. The PROEX has been restructured to reduce the bureaucracy and the access costs to its financing resources, as well as to enlarge the list of eligible products, but many industries still don't have access to the Program. Besides, the equalization of real interest rates by the government is not a solution to the problem itself. It really helps as a short-term remedy, but it also represents a cost in the government budget.

The taxes charged on financial operations and on investments do not stimulate the increase on the national savings rate. The government does not have a policy to incite the private savings, and it does not save as well. Therefore, Brazil is more and more dependable on foreign capital to supply its new investment demands. Once again, the taxes charged on financial operations and investments are crucial to the current main goal of the Brazilian Ministry of Finance – the balance of the budget. Consequently, the government cannot reduce taxes without incurring the risk of worsening the public deficit.

A.5. The Excessive Regulations on the Productive Sector

The amount of regulations, laws, rules set by the government to regulate the private sector require companies to employ a significant amount of time and resources to deal with the accomplishments of the fiscal, labor, commercial, environmental requirements that express the control norms established by the government.

The private sector complains about the cost of allocating human resources and time to identify and interpret all those norms, as well as the cost of uncertainty generated by constant changes on those regulations. Many times, it is hard to define the jurisdiction and competency among the governmental branches, as well as between the federal government and the state ones.

A.6. The Educational and Health System

Despite the importance of having an educated and healthy society both to increase competitiveness and to improve the welfare of its people, it seems that those issues do not receive the attention deserved. Education and health are not viewed nor analyzed through an economic perspective in Brazil. In most developed countries, the government has strongly acted to improve and to supply education and health in very high standards to their citizens. It is part of the government role to encourage the development of the factors of production, and consequently the nation's competitiveness. An educated and healthy society produces more, lives better, has a higher purchasing power and generates a dynamic cycle of general economic improvement.

Despite the fact that a better distribution of wealth and a higher purchasing power in the society would stimulate savings, consumption and consequently the whole country's productivity, the private sector in general does not seem to worry and complain about reforms on those fields. Education and health are viewed as paternalist actions that the government must do to help the poorest ones, claimed by the left parties of the society.

Unfortunately, neither the CNI (the Brazilian industry association) nor the World Bank has highlighted the economic importance of a deep reform on those national

systems. Education – or the lack of it – is probably the biggest problem and the highest cost that burdens the Brazilian competitiveness.

Brazil must invest on education in a broad sense: offer basic education to all society, train teachers and value the teaching career, encourage partnerships among private companies and universities/institutions of research, create alternatives to university degrees, invest in R&D centers (basic research spreads technology among the productive sectors of society), among other actions. Even though these areas have not received the deserved attention from both government authorities and the private sector, it can be observed that they recently became objects of concern in Brazil.

B. The Fora of Competitiveness

B.1. Definition

The Fora of Competitiveness are a Program developed by the Ministry of Development, Industry and Trade – MDIC, through the Secretariat of Production Development. The Program is part of the PPA 2000/03 (Brazilian Government Pluriannual Plan), under the generic name of Brazil World Class Program. It is a working space for the discussion about needs and necks of each productive chain in order to seek solutions, as well as to establish goals and actions that come to configure a development policy for the Productive Sector.

B.2. Objectives

B.2.1. General Objectives

The Program seeks the integration between the productive sector (represented by the sector associations and labor unions) and the Government representatives. It constitutes an innovative discussion process, aiming to act on the competitive capacity of the national productive sector and, simultaneously, to consistently augment the potential of labor absorption, as well as to improve the regional development.

B.2.2. Specific Objectives

The Fora of Competitiveness intend to act in three levels: competitiveness improvement, job level increase and regional productive distribution. These three levels reflect in seven specific goals:

- **Job generation, occupation and income**, aiming the internal market strength and, consequently, the income distribution improvement;
- **Regional productive capillarity**, aiming the reduction of the current unbalances in the regional development;

- **National company strengthening**, seeking to offer competitive isonomy permanent conditions for the Brazilian companies;
- **Technological qualification**, as a leveraging element of the quality, productivity and innovation;
- **Exports increase**, aiming to expand the trade borders and to generate jobs in the internal market through an increase of the international trade;
- **Insertion of the Brazilian productive chains in the international economy**, seeking, in the medium and long term, increase the Brazilian share in the international market.

The goals and actions entailed to the objectives must be challenging and feasible, regarding each one of the factors that are related to the necks and opportunities in the productive chain. At the same time, it intends to set as parameters the indicators of the correspondent international chain competitor, as a way of increasing the competitiveness of the companies' goods and services of the production chain at issue.

With the Fora, the Federal Government intends to make possible the systematic and transparent articulation between Government and actors of the productive sector. It would allow a better society demand organization and its analysis by the Government. That temporal perspective of productive policy for the chain would help the private sector to take long-term decisions about its investments.

B.3. The Productive Chain Selection Criteria

The productive chains were selected according to the potentialities of each chain with regards to *gains on competitiveness* (technological qualification, exports increase, national companies' invigoration and the Brazilian insertion in the international market), *job level increase* and *productive distribution* (regional productive capillarity).

Based on these criteria, the following eleven chains were selected: 1) *Civil Construction*; 2) *Electro-electronics*; 3) *Chemical (Plastic)*; 4) *Textile and Apparel*; 5) *Cosmetic, Personal Hygiene and Perfumery*; 6) *Wood and Furniture*; 7) *Leather and Footwear*; 8) *Automotive*; 9) *Tourism*; 10) *Naval*; and 11) *Agribusiness*.

B.4. The Functioning

B.4.1. Planning

After the productive chain selection, it starts a data raising process, in order to identify:

- the chain drawing, and the delimitation of its links;
- the involved actors (Government, business sector - representative associations - and workers);
- the profile of each link (number of companies, jobs, production level, investments, trade balance, territorial distribution, technological level and international insertion);
- the previous existing diagnoses.

Once that basic knowledge is acquired, the Government summons a meeting, with representatives of the private sector, in which the Forum proposal is presented. The Government meets apart, at the same time, to define the distinct governmental entities' participating in the Forum at issue. As a first stage, the elaboration process of a common diagnosis for the chain begins. For this, the three involved sectors of the society (Government, company associations and labor unions) prepare separated diagnoses, taking into account their visions and expectations about the development of that specific chain. These diagnoses are debated until a common diagnosis is reached. The final diagnosis must define the macroeconomic policies that affect the productive chain – either generically or specifically –, policies focused in certain links of the chain, and the commitments and goals to be pursued by the private sector.

B.4.2. Settlement

Once a common diagnosis is reached, the productive chain is apt to install its Forum of Competitiveness. The representatives of the associations therefore assume the commitments and goals specified in the consensual diagnosis.

At that time, and due to the data previously raised, the Government intends to be able to:

- inform and homogenize the knowledge about the productive chain;
- clarify the paths to be followed and organize the efforts towards solving the chain competitiveness problems;
- give visibility to the productive chain needs;
- format policies to the productive sector.

B.4.3. Operation

Previous to the inauguration meeting, a group (with representatives from the Government and the private sector) is created to follow the accomplishment of the objectives and commitments agreed. From that moment on, the Forum becomes an environment of pursuance and monitoring, as well as of discussions about new demands and problems that emerge inside the productive chain. The Forum and the monitoring Group will have an important role when quantifying the gains and improvements obtained through the accomplishment of the goals. It will be important as well on the elaboration of governmental policies to the productive sector.

IV. Competitive Analysis of Brazilian Productive Chains

As a way to empirically evaluate how the systemic costs affect the productive sector in Brazil and the role of the federal government in creating a favorable environment to promote development and increase competitiveness, it would be interesting to analyze a productive chain.

The textile and apparel chain is very representative and, mainly due to its complexity and size, affected by most of the systemic costs faced by the Brazilian productive sector.

A. Concept of Productive Chain

Productive chain is the set of progressively related segments and activities, since the basic inputs until the final product, including the distribution and sales, representing links of the same chain.

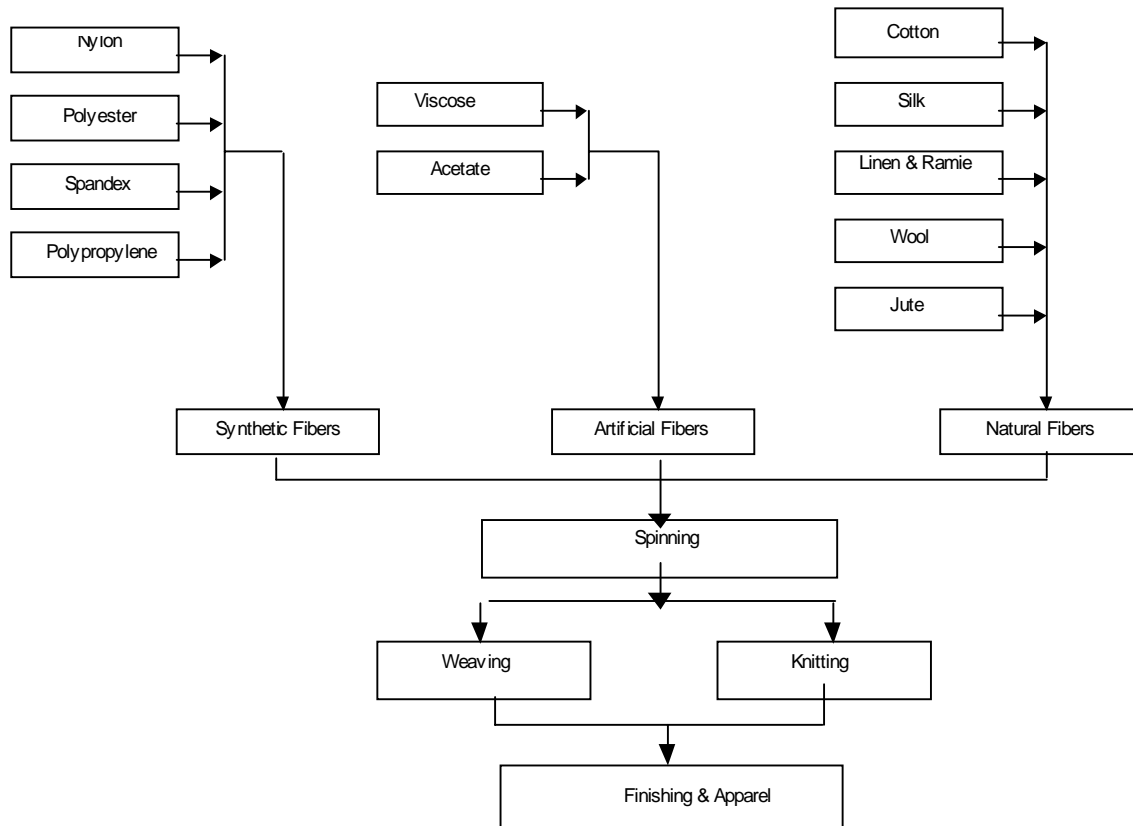
The use of that concept allows: *a) a better visualization of the chain as a whole; b) the identification of the weaknesses and potentialities in each of the links; c) the solidarity when focusing the problems of the chain; d) the identification of necks, missing links and stranglings; e) to maximize the efficiency of political-administrative policies, among others.*

At present, the international competition occurs among productive chains. Therefore, in order to compete internationally, the countries should examine their productive chains when settling their industrial and trade policies.

B. The Textile and Apparel Chain in Brazil

The textile chain definition has their basic outlines illustrated in the figure below. It comprehends, in the first chain activity, the production and the natural fibers benefit.

Figure1 - Textile Chain Basic Configuration



Source: FGV (1999).

With regards to the kind of raw material used by the Brazilian textile sector, approximately 70% is cotton fiber, 25% are artificial and synthetic fibers and 5% are linen composite, wool, silk, etc. In consequence of that distribution, any analysis of the chain must focus in the upstream links of the chain that demand those fibers.

The artificial fibers compose a parallel sector in the chain – obtained from the natural cellulose regeneration, resulting in fibers as the rayon, acetate and triacetate. The synthetic fibers are those derived from petroleum (polyester, nylon, acrylic and propylene). The natural and synthetic fiber mixture allows a wide variety of mixed yarns, which present very diversified physical and chemical characteristics.

The following upstream link is the yarn/thread production in the spinning process. The natural fiber spinning comprehends several operations through which the fibers are

lined in a same direction – in parallel – and twisted in a way that they get fixed to each other by attrition. The artificial fiber spinning is composed by the extrusion operation stages. Here, a pasty substance is pressured through the draw-plate, resulting in filaments that are hardened through the solidification operation.

The spinning segment is a high investment segment that in Brazil is represented by big companies. The more efficient Brazilian companies (and of larger output) are competitive in the yarn/thread market. The ones of average output do not produce in economic technical scales, to the point of surviving in a segment that is very globalized and competitive. The Brazilian spinning link has presented difficulties in supplying the national market in expansionary phases of demand. In Brazil, this link is composed by companies of average to big output and is capital-intensive.

The next upstream link is the weaving. The fabrics are a result of distinct technical processes, of which the most important are weaving, knitting and the not-woven fabrics.

The plain weave fabric is obtained by the tangle of yarns in right angles made by a loom. This process demands a previous preparation of yarns, such as the warping and starching process. In the weaving segment, there are basically three important lines of fabrics:

- a) The twill weave fabrics, comprising the indigos, drills, for jeans and professional clothes confection, sometimes mixed with polyester;
- b) The light fabrics, with a great variety of fabrics and printings, as well as viscose;
- c) The bedding, tablecloths, and bath towels, as well as for decoration.

The twill weave fabric is a commodity and small and medium-sized companies are not competitive. A line of basic product with well-defined standards composes the market, and due to this characteristic, it is a market of extreme competition among producer countries. The high competition increases the demand for quality and prices. Therefore, companies should produce with high economies of scale to be competitive. The weaving segment has become very capital-intensive.

In the knitting segment, the technique consists of one or more series of yarns interlocked into a series of connecting loops, which confers larger flexibility and elasticity to the fabric. This process does not require previous procedures of raw material

adaptation to the machines. The techniques used in the knitting process are classified in two kinds: weft knitting (rectilinear or circular looms) and warping knitting. Small and medium-sized companies can be more competitive in the knitting segment since it is characterized for being less capital-intensive than the weaving segment.

The finishing and apparel segments represent the last upstream links of the chain. A big heterogeneity and a high degree of diversity characterize those segments, particularly in the apparel one. The latter comprises at least 20 distinct subdivisions, including bedding, tablecloths and bath towels, lingerie, dresses and accessories.

B.1 The Weaving Segment

The textile and apparel chain is very complex and presents a great number of links. In order to better understand the impact of the systemic costs in a productive chain, it is necessary to concentrate the analyses in a determined link (segment) of the chain. The weaving link is very representative because its international market has been the scenario of a tough competition among countries and companies, as well as object of subsidies and trade barriers. Historically, it has been a labor-intensive segment where some countries have become competitive due to its predominance in some market niches. But, on the other hand, the segment faces a trend to become more capital-intensive with the introduction of modern capital goods.

The weaving segment in Brazil, after the commercial opening implemented at the beginning of 90s and the stabilization plan instituted in 1994, has experienced profound changes, both in terms of technological equipment and companies' strategies, in order to survive under the new instituted competitive paradigm.

In this way, the sector's companies took actions in two distinct directions: the big integrated companies focused their business in standardized products, or commodities. They carried out big investments in capital goods and modern facilities (mostly regions that offered fiscal incentives and cheaper labor), mergers and acquisitions, as well as new models of corporate governance. In order to compete internationally in the commodity market, the companies had to reduce their production costs, to rationalize the allocation of inputs and the raw material waste, and to intensify their relationships with clients. The company integration itself in the productive chain, from the spinning segment

until the apparel one, in some cases, allows it to reduce the tax expenses, partially minimizing the lack of a tributary reform in Brazil. Those highly competitive companies produce mainly twill weave fabrics (indigo/denim) or pile/looped weave fabrics (nap fabrics).

For the non-integrated companies, the key element for their survival is the continuous differentiation of their products, trying to unequivocally avoid the commodities' markets. These companies, most of them unable to acquire new machines, concentrated their actions in the continuous search of cost reduction. They have rationalized the utilization of inputs, concentrating the production of products that had generated larger profitability, and closed inefficient and costly factories, so that they could capture determined business niches that the big integrated companies have never shown interest in them because they were uneconomical. However, since these companies seek uninterruptedly the product differentiation, the raw material acquisition with the quality required for this differentiation is a constant risk. The companies that have survived the market adjustment process, although have achieved a superior degree of competitiveness, still are not internationally competitive. In order to become more competitive, they need to upgrade their capital goods and obtain a better access to the imported raw materials. It would be necessary a review of the Mercosur's External Common Tariff in order to solve those systemic costs (currently, the ECT for capital goods is 17% and many raw materials have substantial import duties).

The Brazilian weaving sector after 1990 has experienced two distinct moments. Firstly, it grew continually up to 1994, when the production reached the output of 1 million tons (810 thousand tons, in 1990), seeming that the competitiveness shock with the commercial opening had provoked a positive reaction of the sector. However, after 1994 – year of the stabilization plan introduction that brought, besides the increase in the available real income, a strong raise in the internal interest rates – the production fell by 20%, reaching in 1995 and 1996 an average of 894 thousand tons. In 1997, the lowest point in the series, the production reached only 734 thousand tons (a reduction of 30% regarding the production observed in 1994). In 1998, however, the production increased by 14%, reaching 835 thousand tons, as illustrated on the table below:

Table 2
Weaving Segment

Year	Production (tons)	Imports (tons)	Exports (tons)	# Companies	# Employees
1990	814,824	7,336	35,746	1,458	140,665
1991	842,769	8,180	46,038	1,444	117,333
1992	949,808	5,327	74,221	1,264	124,864
1993	1,003,231	16,910	63,388	1,183	88,513
1994	1,042,703	46,482	55,001	1,083	88,472
1995	839,472	94,455	51,904	986	62,135
1996	849,820	53,712	50,109	834	58,614
1997	734,000	49,098	42,987	700	47,500
1998	835,000		44,700		

Source: MDIC/FGV

In order to contain the expressive growth of imports, mostly originated from Asia and produced from synthetic and artificial threads, the government raised the import tariff for the segment (from an aliquot of 15% to 70%). This action immediately made the imports decrease by 50 thousand tons on average, in the 1996/97 biennium.

There is a very important aspect that must be stressed: the impressive increase on the imports of weaving loom machines, that raised from an average of US\$ 39.9 millions in the period of 1990/92 to an average of US\$ 76.9 millions in the period 1994/96. These imports resulted immediately in an increase in the utilization of more productive looms, with a significant growth – in the period 1990/96 – of the water jet looms (145%) and the air jet ones (226%). The air jet looms were responsible for 20% of the sector's national production in 1996, when in 1990 this percentile was of just 4%. The effort to increase productivity and quality is a natural reaction to the increase on internal competition and an attempt to reach international patterns of competitiveness.

With regards to the Brazilian exports, after reaching an export peak in 1992 of 74 thousand tons, they fell continually until 1997, when they reached 44 thousand tons. However, in 1998, a 4% increase in the export production was observed. It must be highlighted the exports on cotton fabrics, whose average participation in the 1992/97 was of 75% from the total exported fabrics (percentile already observed in the beginning of the decade of 90s), evidencing the high level of Brazilian competitiveness in the

production of cotton fabrics. It also corroborates the notion of rigidity and lack of new products in the Brazilian exporting list.

Concomitantly to this production behavior, the segment faced a strong and continuous decrease in the number of companies. The strong impact in the segment caused by the commercial opening has obliged, in varied degrees, the segment companies to rationalize their costs and the productive processes, seeking, according to their financial capacity, the best way to restructure and become more competitive. Many companies achieved a higher level of competitiveness and could survive. But many others had to shut down.

It was also observed, during the period of 1990/97, a continuous decrease in the number of employees in the segment. That decrease must not be attributed only to the decrease on companies, but also to the companies productivity raise.

Therefore, the commercial opening process and the consequent increment on competition with the imports forced the segment to adjust itself to a new reality. That adjustment was not accomplished in a homogeneous way among the different companies of the segment. In fact, it was accomplished according to the financial capacity of each company. The costs of raising money to invest on capital goods, modernization, and working capital have been very high throughout the last decade, giving an advantage to those companies that could count on their own money resources or international money (mainly big companies and multinationals). There was a general productivity increase in the segment, since the companies' number decreased, as well as the number of employees was optimized. The shutdown of the less efficient companies of the segment, which did not succeed in adjusting or that were not apt to face the new competitive scenario imposed to the chain, contributed to the raise of the productivity standards in Brazil.

In the following Table, it is possible to compare the industrial production costs of the weaving segment in Brazil related to the costs faced by other producer countries.

Table 3
Industrial Costs – Weaving Segment

	<i>US\$ per Yard of Facility</i>							
Cost Elements	Brazil	India	Indonesia	Italy	Korea	Turkey	USA	Average
Labor Costs	0.086	0.023	0.010	0.222	0.111	0.022	0.150	0.089
Energy Costs	0.035	0.055	0.033	0.060	0.034	0.034	0.033	0.041
Raw Materials	0.054	0.050	0.027	0.050	0.054	0.036	0.039	0.044
Depreciation	0.106	0.092	0.099	0.123	0.093	0.143	0.120	0.111
Interests	0.070	0.092	0.076	0.071	0.062	0.051	0.045	0.067
TOTAL COST	0.352	0.311	0.246	0.526	0.287	0.287	0.387	0.352

*Source: International Production Cost Comparison, 1997.
All costs are FOB/Facility*

Brazil does not have a competitive production cost regarding Indonesia, Turkey and India, countries with lower labor costs. Brazil also presents a disadvantage in the raw materials acquisition costs (about 21% superior to the average and the biggest cost among the countries analyzed) and in interests (about 5% superior to the average). The disadvantages in these items were expected, once Brazil detains one of the highest interest rates in the world. Regarding to the raw materials, the difficulties are intimately related to the Cost Brazil, (inefficient transportation infrastructure and high tax burden), as well as the worst purchase financing conditions of these materials (what again is intrinsically related to high interest rates practiced in the country).

The automation increase and the use of microelectronics devices in the productive process have demanded a higher labor quality level, existing therefore a shortage on qualified labor in the market. It can be considered a bottleneck in the development of the segment productivity.

The labor quality as a restrictive factor of competitiveness is more significant to the big and integrated companies. These companies carried out huge investments in last generation capital goods. There is therefore the continuous need of research and training centers to prepare qualified labor force, given the constant innovations in the textile capital goods sector.

According to data collected, the labor average cost in the textile industry in Brazil was, in 1997 numbers, US\$ 3.84/hour. In comparison to other producer countries – Taiwan: US\$ 6.38; South Korea: US\$ 5.65; Hong Kong: US\$ 4.77; China: US\$ 0.58; and India: US\$ 0.56 - the relative labor cost in Brazil is not expensive. However, it must be taken into account the high social duties that the companies fixed in Brazil are obliged to pay according to their payrolls. For labor-intensive industries, the social duties can constitute a burden to their international

competitiveness, since they compete with other labor-intensive companies situated in countries with much lower social duties.

The following tables illustrate the effort of companies to modernize their industrial process through the upgrade of their capital goods.

Table 4
Installed Capacity of Capital Goods – Brazil
In Units

	1990	1996	1996/90	1996
Looms w/ Shuttle	141,100	122,408	-13%	78.7%
Projectile Looms	4,163	5,000	20%	3.2%
Pincer Looms	17,541	22,816	30%	14.7%
Air Jet Looms	1,610	5,250	226%	3.4%
Water Jet Looms	53	130	145%	0.1%

Source: FGV

Table 5
Installed Capacity - 1996

Country	W/O Shuttle		W/ Shuttle	
	Units	%	Units	%
China	50,000	5	880,000	95
Indonesia	27,000	12	200,000	88
Japan	67,620	37	116,940	63
Brazil	33,200	21	122,410	79
India	6,280	4	133,760	96
Russia	130,890	90	14,800	10
USA	62,450	87	9,210	13
Taiwan	39,200	88	5,180	12
Pakistan	11,500	58	8,310	42
Portugal	15,630	84	2,920	16

Source: FGV

The figures show the Brazilian productive sector effort to increase productivity through a technological upgrade of its industrial capacity. The relative number of modern looms (without shuttles) has considerably increased in the last decade. However, the percentage of looms with shuttles is still very substantial. Compared to other countries, Brazil has similar characteristics to larger producer countries (China and India), but different of Taiwan, Russia and United States. However, there is a trend to modify that productive profile. China, India and Indonesia – countries with abundance of low-wage labor input – still concentrate their production in looms with shuttles. A loom with a shuttle produces 9.8 meters of fabric per hour, a modern loom produces in average 38.2 meters

– an increment of 3.8 times in output with the same labor input. Modern capital goods and production processes also demand modern corporate governance systems. In that way, there is a latent demand for high-qualified managers. As a consequence, the quality of output must be higher, allowing the companies to recover – and even increase – international market share.

Therefore, it becomes highly necessary that those companies have credit access to financing their modernization. Once again, the cost of high interest rates is a burden to the Brazilian productive sector.

The working capital financing have also become a factor that confines the competitiveness of the companies, once they had to cohabit with the domestic market high interest rates. The working capital financing solution is fundamental for higher increases of competitiveness relating to the international competitors, since these latter are financed through much more advantageous ways.

Another disadvantage that the segment faces is the high administrative costs of maintaining human capital dedicated to deal with the great amount of taxes and regulatory legislation. The bureaucracy generated for calculating the series of several bases and differentiated aliquots, and also the cost of incurring in any mistake, is responsible for raising the fixed costs of production in Brazil. In the international weaving market – characterized by being a commodity market – companies compete mostly in prices. Therefore, any additional cost represents less competitiveness for the country.

B.2 The Textile and Apparel Chain Forum of Competitiveness

The Forum of competitiveness elaborated a social contract proposal between the private and public sector where both sectors would assume some compromises aiming to foster the international competitiveness of the chain.

The goals and commitments of the productive sector would be:

- To carry out investments in the modernization and expansion of the productive capacity;
- To enlarge the national cotton plantation area;
- To increase the total output of the productive chain;
- To increase the labor productivity.

As a result, the productive sector would achieve:

- To increase the number of labor posts in the chain;
- To increase the exports, reaching 1.0% of the world exports in 5 years and 1.4% in 8 years.

Those goals and commitments are better detailed in the following tables.

Table 6
Supply and Demand for the Chain

Link	In Tons		
	1999	2005	2008
<u>COTTON</u>			
• Production	520,600	1,270,000	1,481,000
• Imports	281,882	100,000	120,000
• Exports	4,674	230,000	270,000
• Consumption	797,808	1,140,000	1,331,000
<u>YARN/THREADS</u>			
• Production	907.456	1,383,000	1,610,000
• Imports	28.898	40,000	45,000
• Exports	27.660	75,000	90,000
• Consumption	908.694	1,348,000	1,565,000
<u>MANUFACTURING FIBERS</u>			
- SYNTHETICAL AND ARTIFICIAL FIBERS			
• Production	147,318	320,000	380,000
• Imports	39,410	183,000	266,000
• Exports	7,890	25,200	40,000
• Consumption	178,838	343,800	400,000

- SYNTHETIC AND ARTIFICIAL FILAMENTS			
• Production	199,177	350,000	431,000
• Imports	60,613	65,000	69,000
• Exports	19,954	50,000	70,000
• Consumption	239,836	365,000	430,000
FABRICS			
• Production	1,133,718	1,574,000	1,838,000
• Imports	43,531	50,000	60,000
• Exports	43,193	104,000	138,000
• Consumption	1,134,056	1,520,000	1,760,000
FINISHING			
- APPAREL			
• Production	749,650	889,000	1,051,500
• Imports	13,683	20,000	30,000
• Exports	11,464	110,000	147,000
• Consumption	751,869	799,000	934,500
- HOME CLOTHES			
• Production	167,000	295,000	319,600
• Imports	12,138	20,000	25,000
• Exports	29,853	160,000	188,000
• Consumption	149,285	155,000	156,600
- OTHERS			
• Production	104,000	184,000	212,900
• Imports	54,652	15,000	10,000
• Exports	90,127	120,000	138,800
• Consumption	68,525	79,000	84,100
TOTAL - FINISHING			
• Production	1,120,650	1,368,000	1,584,000
• Imports	80,473	55,000	65,000
• Exports	131,444	390,000	473,800
• Consumption	969,679	1,033,000	1,175,200

Source: MDIC, ABRAPA, ABRAFAS, ABIT & ABRAVEST

Table 7
Trade Balance

LINK	In US\$ thousands		
	1999	2005	2008
COTTON			
• Exports	5,318	265,000	311,000
• Imports	360,800	128,000	154,000
• Trade Balance	(355,500)	137,000	157,000
YARN/THREADS			
• Exports	85,000	230,477	276,573
• Imports	67,500	93,432	105,111
• Trade Balance	17,500	137,045	171,462

<u>MANUFACTURED FIBERS</u>			
- FIBERS			
• Exports	8,700	27,787	44,106
• Imports	47,200	58,685	72,717
• Trade Balance	(38,500)	(30,898)	(28,611)
- FILAMENTS			
• Exports	29,100	72,918	102,085
• Imports	210,900	226,164	240,082
• Trade Balance	(181,800)	(153,246)	(137,997)
<u>FABRICS</u>			
• Exports	188,800	608,400	882,000
• Imports	181,500	208,471	250,166
• Trade Balance	7,300	399,929	631,834
<u>FINISHING</u>			
- APPAREL			
• Exports	167,700	1,609,124	2,150,375
• Imports	159,800	233,575	350,362
• Trade Balance	7,900	1,375,549	1,800,013
- HOME CLOTHES			
• Exports	231,317	1,239,765	1,456,724
• Imports	28,496	46,953	58,692
• Trade Balance	202,821	1,192,812	1,398,032
- OTHERS			
• Exports	181,100	241,126	278,903
• Imports	235,600	64,664	43,109
• Trade Balance	(54,500)	176,462	235,794
<u>TOTAL</u>			
• Exports	1,009,800	4,294,597	5,501,766
• Imports	1,443,000	1,059,944	1,274,239
• Trade Balance	(433,200)	3,234,653	4,227,527

Source: MDIC, ABRAPA, ABRAFAS, ABIT & ABRAVEST

Table 8
Scheduled Investment

LINK	In US\$ Millions			
	1990-99	2000-05	2006-08	TOTAL
COTTON FIBERS	1,900	1,320	474	1,784
MANUFACTURED FIBERS	400	1,060	350	1,410
YARN/THREADS	1,800	795	477	1,272
FABRICS	4,300	2,297	2,218	4,515
• Weaving	2,000	550	564	1,114
• Knitting	900	211	467	678
• Finishing	1,400	1,536	1,187	2,723
APPAREL	1,600	1,791	1,635	3,426

GENERAL INVESTMENTS	0	165	0	165
• Export Promotion	0	60	0	60
• Strategic Alliances	0	100	0	100
• Research on Design	0	5	0	5
TOTAL	10,000	7,428	5,144	12,572

Source: BNDES, ABRAPA, ABRAFAS, ABIT e ABRAVEST

If, on one hand, the private sector assumed to accomplish those established goals, on the other hand, the Forum document proposes that the government adopt a series of priority public policies that stimulate the development of competitiveness in this specific chain. Those priority policies would be:

1. Production Financing – The private sector would need more access to credit to finance its working capital and restructuring processes. At same time, it asks the government for creating special lines of credit to finance capital goods acquisition and upgrade. The industrial chain complains about the lack of isonomy in interests and financing conditions between the Brazilian chain and its international competitors and asks the government for correcting that international disadvantage.
2. The Tax Burden on Production – The sector demands a permanent policy of import tax exemption to capital goods and their parts with no regional production. The acquisition of capital goods and their parts should be faced as investments that will generate production and employment. Therefore, it should not be taxed. Besides the import tax, there are additional taxes charged on the acquisition of capital goods, such as IPI (industrial tax) and ICMS (consumption tax). The private sector requires – as a way to incentive investments on capital goods – the elimination of the IPI over the acquisition of capital good, either they are imported or nationally produced. Also, it believes that the fiscal reform should contemplate two important aspects of the chain: special treatment for labor-intensive chains and total elimination of taxes over export goods. Lastly, it asks for tax exemptions on money designated to international promotion and participation on trade fairs.
3. Inspection of Imported Goods – The productive chain complains about the lousy import inspection process on customs. It stands that the import liberalization process lacks of transparency and the chain faces an unfair competition with imported goods that do not follow the same standards and regulations imposed to the national

product. It also suggests that the government should definitively ban the imports and internal commercialization of used clothes.

4. Trade Defense – The sector claims that it should closely participate and advise the government delegates on the negotiation of the several international trade agreements that Brazil is taking part of. At same time, the government must carefully follow the application of the terms negotiated on the WTO's Textile and Apparel Agreement.

The document also proposes actions to stimulate the chain productivity. They are:

- Incentive the development of clusters through specific programs that attend the necessities of each region.
- Develop training programs aiming to upgrade the productivity of labor and increase the supply of specialized human capital for the chain.
- Implement policies to foster the participation of the small and medium sized companies on the chain's exports.
- Continue with national programs of quality and design.
- Eliminate the child labor and the illegal labor in the chain.

The Forum has just started operating and, since the achievement of competitiveness is a dynamic process, the proposals might be altered as the discussions grow. It is interesting to notice that the document strengthens the overall comprehension about the urgent necessities of reforms in some areas of the government. The elimination of the so-called Cost Brazil is considered not only essential to achieve a sustainable growth in competitiveness, but it is for many companies a question of surviving. Therefore, once the private sector understands that the Cost Brazil is solved, it probably will focus its attention more on suggesting longer-term development policies that foster to create advanced factors of production in a sustained way.

V. Conclusion

Undoubtedly, the Brazilian government is conscious about its role on the development of the international competitiveness of its firms. Both efforts, the Constitutional reforms and the Fora of Competitiveness represent the awareness of an administration committed to insert the country in a globalized world. Nevertheless, there has not been much advance on developing the basic factors of development (education, health, infrastructure, etc.). The Brazilian government has a historical social debt with its population and, despite the last efforts on those fields, it will be necessary many years to narrow the gap with the developed countries and even with some developing countries, such as Argentina, Korea, etc.

The role of the Fora is extremely important to the future development of the country. For the first time, the government and the private sector are organizedly meeting to study the production chains, establish proposals and set common goals that lead the country to a higher level of competitiveness. But all these efforts need that the country reaches higher level of development in its basic factors of competitiveness. It is well known that there is no sustainable development without the existence of these factors. They are the foundations of further development and the cornerstones with which the Fora can create an environment of sustainable development of competitiveness in the country.

Recently, the FIRJAN (Federação das Indústrias do Rio de Janeiro) ordered a study with the objective to evaluate the Brazilian technological market in order to attract more investments to that State. But the study revealed that Brazil presents a very worrying technological lag, even when compared to other similar developing countries.²¹ Brazil presented the worst educational level among the biggest countries in Latin America. The use of Internet is still one of the lowest in the developing countries, in relative terms. At same time, the technological content on the Brazilian exports is increasing slower than in countries like Chile and Mexico. Brazil has only 180 scientists for each million inhabitants, while Argentina has 700 and the United States has 3,800. The number of students in the universities is proportionally the half of countries like

²¹ See Diegues, Consuelo (2000), *Engrenagem Enferrujada*, Revista Veja, # 1,666, São Paulo.

Argentina and Chile. Besides that, many of the best students, when graduated, leave Brazil to work on developed countries.

These data only corroborate the pessimism shown by some financial institutes when analyzing the long-term perspectives on the Brazilian economy. At present, the Brazilian economic indicators are very stimulating. But many institutions doubt that Brazil will be able to maintain for a long period the current level of growth and development. These institutions base their analysis exactly on the Brazilian educational and technological inferiority compared to other similar countries. Therefore, investments on education should become a priority in Brazil if it wants to narrow that worrying gap.

The regional productivity capilarity is another objective of the Fora that should be highlighted. At present, less developed regions in Brazil attract firms using unsustainable factors of competitiveness (fiscal relief, for instance). The government should, therefore, deal with another kind of gap: the internal differences of development among the regions. The North/Northeast must develop in terms of education and technology and also be able to produce technological-intensive goods. Brazil cannot afford these internal development unbalances if it really wants to become a member of the developed world.

With regards to the constitutional reforms, it is urgent and mandatory that Brazil continues with the process of constitutional changes and modernization. There is no doubt that the Ministry of Finance must keep the budget balanced, but the government needs to find out alternatives – other than those that burden the productive sector – to raise money. The fiscal reform has become crucial to the future of the Brazilian productive sector, as well as to keep attracting foreign direct investments.

Brazil has a long and tough war to win and the victory in some small battles must not lead the government and the society to a position of relaxation. The credibility of the whole process depends on the continuity of the efforts already made and the long-term commitment in creating a competitive country that brings wealthy and social justice to all its citizens.

VI. Bibliography

- Brenton, P., Scott, H., & Sinclair, P. (1997), ***International Trade – A European Text***, Oxford University Press, New York.
- Brown, K. (1999), ***Finding a Measure for the Unmeasurable***, The Financial Times Limited, London.
- Confederação Nacional da Indústria/PEC (1998), ***Custo Brasil: o que foi feito, o que ainda precisa ser feito***, Brasília.
- Department of Trade and Industry/UK (1999), ***Our Competitive Future – UK Competitiveness Indicators 1999***, London.
- Dieguez, C. (2000), ***Engrenagem Enferrujada***, Revista Veja, # 1,666, São Paulo.
- Evans, M. (1949), ***Fundamentals of Clothing and Textiles***, Prentice-Hall, Inc., New York.
- Grupo de Investidores Estrangeiros (1996), ***Green Book***, São Paulo.
- Instituto Brasileiro de Economia/FGV (1999), ***Análise da Eficiência Econômica e da Competitividade da Cadeia Têxtil Brasileira***, São Paulo.
- Linton, G. (1961), ***Applied Textiles***, Duel, Sloan & Pearce, New York.
- McKinsey Global Institute (1997), ***Produtividade: a Chave do Desenvolvimento Acelerado no Brasil***, São Paulo.
- Meier, G. (1998), ***The International Environment of Business***, Oxford University Press, New York.
- Porter, M. E. (1990), ***The Competitive Advantage of Nations***, The Free Press, New York.
- Porter, M. E. (1998), ***On Competition***, Harvard Business School Publishing, Boston.
- Sachs, J. (2000), ***Making Globalization Work***, The George Washington University, Washington D.C.
- Secretaria do Desenvolvimento da Produção/MDIC (2000), ***Fórum de Competitividade da Cadeia Produtiva da Indústria Têxtil e de Confecções (Plano de Metas e Ações)***, Brasília
- Secretaria do Desenvolvimento da Produção/MDIC (2000), ***Fóruns de Competitividade – Documento Básico***, Brasília.
- World Bank (1996), ***O Custo Brasil Desde 1990-92 – Report #15663-BR***.