

A Strategy to Prepare Embraer for the Restricted Proex Financing System

An Approach to End the Aircraft Subsidies Dispute

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This paper was researched and written to fulfill the M.A. project requirement for completing the Monterey Institute of International Studies' Master of Arts in Commercial Diplomacy. It was not commissioned by any government or other organization. The views and analysis presented are those of the student alone. Names of people, corporations, businesses and governments are used only as examples, in order to depict a realistic, albeit fictional, scenario. This does not represent any knowledge of these examples, nor does it in any way represent an endorsement by an individual, corporation, business or government. The general background and information related to the relevant laws, regimes and agreements is factual, although students will need to supplement the information on specific WTO agreements and cases through their own research.

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Scenario

For the purpose of this project, I assume the role of a strategic planner of Embraer, a Brazilian regional aircraft manufacturer, addressing the WTO subsidies dispute with Canada. After 5 years of discussions and attempts to negotiate a solution regarding both Brazilian and Canadian government subsidies to aircraft producers, the CEO of Embraer assigned me with the task of finding an alternative solution to move the negotiations along or settle the dispute of the WTO Dispute Settlement Body (DSB) proceedings.

For the purposes of this project, I assume the timeframe to be May 2001. As of August 2001, the DSB Panel ruled Proex (Brazilian export financing program) to be legal thereby changing the legality of my arguments. Thus, I assume my analysis and recommendation to take place before this ruling.

Issue

On 14 April 1999, the WTO/DSB Panel ruled that Proex, the Brazilian export-financing program, was illegal and had to be changed. This ruling has been met with contention by the Brazilian government. The Government of Brazil eventually made the required changes to Proex; however, the Canadian government is not satisfied with the extent of these amendments and is requesting further modifications to be made to the export financing program. Meanwhile, Brazilian government and industry are demanding that the Canadian government modify the subsidies system benefiting the Canadian aircraft manufacturer, Bombardier. The dispute intensified when, as a form of retaliation, other Canadian interest groups adopted a ban on the import of Brazilian beef to Canada and the entire NAFTA market.

The aircraft subsidies dispute must be brought to an end for the following reasons:

- It is harming the image of both aircraft manufacturers, Embraer and Bombardier;
- The respective governments' intransigence and failure to negotiate an acceptable solution must be brought to an end before further damage occurs to their diplomatic relation;
- The contention may lead to other retaliation, as exemplified by the ban of Brazilian beef to NAFTA markets;
- Both governments are diverting significant resources to this dispute, which could be otherwise be applied to other pressing trade issues;
- A solution to the issue of aircraft subsidies must be found within the next few years before the two aircraft producers enter the wider, more competitive global

commercial aircraft market which will present further complex and contentious issues for both companies;

- To avoid a repeat of the case in which the Canadian government overtly subsidized Bombardier sales to the American airlines. The reason the Canadian government gave was 'to counter the Proex system'. The result was that Embraer missed the opportunity to win a significant set of contracts for 125 jets and over 100 options, worth a total of US\$ 4 billion.

Executive Summary

To: Mr. Maurício Botelho, President & CEO of Embraer
From: Mr. Saulo Nogueira, Strategic Planner – Embraer
Re: Strategy to Prepare Embraer for the New Restrictions of Proex
Date: 24 April 2002

Issue

Embraer is at a competitive disadvantage because the WTO Dispute Settlement Body (DSB) has recently applied restrictions to the Brazilian export-financing subsidy, Proex. Our disadvantage is compounded by the fact that our chief rival, Canadian aircraft manufacturer, Bombardier continues to receive illegal subsidies. Since 1996, the Canadian and Brazilian governments have been challenging each other's subsidies to their respective aircraft manufacturers. The tension of the dispute has escalated and led to indirect retaliation, hurting Embraer's performance and other sectors of the Brazilian economy.

Embraer needs to find a way to compensate for the burden from the new restrictions. Proex accounts for the higher country risk interest rate for purchasing charged by banks in Brazil. By pushing for a research and development (R&D) tax incentive, Embraer will be able to level the playing field with the Canadians, and other competitors, while compensating for the higher end prices resulting from using the new Proex. Economic estimates show that Embraer has a price advantage over Bombardier's aircraft when no government-backed financing programs are involved. Therefore, Embraer should support the Ministry of Foreign Relations in reaching an agreement by both Governments to restructure their aircraft subsidy programs according to World Trade Organization (WTO) rules as soon as possible.

Background

Canadians initially took the issue of Proex subsidies to the WTO in 1996, when the Dispute Panels first ruled that the financing programs of both Canada and Brazil be

redesigned so as to satisfy international lending standards. The Canadians have changed two programs to the satisfaction of the DSB, but still have three programs under investigation. It is expected that the DSB will require the programs under investigation to be restructured as well. Brazilians have changed Proex to fit with the Panel's specified international standards, yet the Panel still needs to confirm that the changes comply with international standards. The Canadians are not satisfied with the new terms of Proex (Proex III) and demanded that an additional 'exposure fee' be added to the Proex loans, to account for lender and country risks. While Embraer's aircrafts are of high quality, a special attraction to its customers has been Embraer's price, facilitated, in part, by the financing terms of Proex. The new financing terms of Proex III would reduce the value of Proex financing by 70%, raising the overall price of each airplane by approximately US\$ 1 million, compelling Embraer to seek out ways to compensate for the negative impact to its competitive advantage.

Embraer's large R&D investments are an inherent part of competing in the aircraft industry. However, there is a lack of government policy that encourages R&D in Brazil making it an expensive part of business operating costs. Canada, and many other developed countries have long had tax incentives for investing in R&D. These policies encourage companies to develop new technologies and products that bring benefits to their performance and to other industries through spillover effects. Another level where the Canadian's context is noticeably better than Brazil's is the transportation infrastructure and costs. While the Canadians can rely on efficient transportation infrastructure to move their goods, Brazilian businesses are weighed down by high transportation costs. Several government and private agencies have recognized the importance of R&D in these industries, yet the Government of Brazil fails to adopt policies to support R&D.

The symbolic status of Embraer as Brazil's national aircraft manufacturer, and the strong political ties to it, has turned the restriction of Proex into a serious debate in the Brazilian political scene. Being the biggest exporter since 1998, Embraer is revered by many Brazilian politicians who admire its success in a sector that is so technologically advanced for a developing country. The WTO Panel ruling against Proex reinforced growing criticisms of the WTO, with the notion that WTO rules only serve the developed nations. The Ministry of Development (MDIC) designed Proex and has been especially reluctant to concede to the mandated changes to the export subsidy. Unfortunately, WTO pressure on the Ministry of Foreign Relations has restricted Brazilian trade representatives' negotiating options. Indeed, Brazilian trade representatives have taken a very stern position on Proex by delaying mandated restructuring of the export program. These delays in turn provoked the Canadians to behave similarly by delaying compliance with the Panel's requests for data regarding Canadian subsidies under investigation. Thus, there is an urgent need for Embraer to find a way to compensate for the new Proex burden so that Brazil's trade representatives have more flexibility in negotiating Proex with the Canadians.

Recommendation

Embraer should campaign for a new tax law that grants tax credit to companies investing in research and development. The law will be two-tiered: a higher credit for the transportation industry and a lower credit for all other industries in the Brazilian economy. Meanwhile, the government will negotiate with the Canadians to push for reforms of their subsidies to the aircraft industry, on condition that Proex is modified according to the standards set by the DSB Panel decision.

Strategy

Domestic

Embraer should build a business coalition of supporters of a tax bill that grants tax credits for R&D expenditures in Brazil. This coalition will firstly approach the Ministry of Development, Industry and Commerce to explain the purpose of our proposal, and gain their support to introduce the bill to Congress. Meetings will then be held with the other Ministries to gain their full support. To expand our political coalition beyond the executive level, we will demonstrate the benefits of the R&D tax proposal to regional politicians who in turn the legislative members will perceive the demand for the bill by their constituents and political colleagues. A media campaign will then amplify the presence of the R&D issue in Brazil. Meanwhile, our coalitions will be lobbying the Deputies and Senators to approve the bill when the votes take place at the different levels of Congress. Our action plan will have a 15-month schedule so that the President ratifies the bill at the very latest by August 2002, a couple of months before the Presidential elections.

International

Embraer should continue to provide trade data regarding Proex to the Ministry of Foreign Relations while also researching more on the Canadian EDC subsidies that are benefiting Bombardier. We will also convince the Ministry to push the Canadians to reform their subsidies according to future DSB Panel rulings. In exchange, the Ministry can offer the Canadians that the specific changes they want to see made to Proex III will be made, on condition that these changes are removed if the Panel determines these changes to be unnecessary.

Introduction

Since its privatization in 1994, Embraer, a regional aircraft manufacturer, has become Brazil's largest exporter. The company's success became evident in two ways: it developed into Brazil's largest exporter in a short period of time, and it came to succeed in a hi-tech sector in which developing countries normally fail. Indeed, the

company has been glorified by key political and business figures alike, both domestically and abroad. Brazilian President Fernando Henrique Cardoso has repeatedly named the company as a symbol of the quality of Brazilian products.

However, Embraer's success in the international aircraft market has also led to its ongoing subsidies dispute with Canadian rival Bombardier. Seeing its market share slipping away to Embraer, Bombardier decided to investigate possible areas of controversy in the Brazilian company's activities. Bombardier questioned a Brazilian export financing subsidy called 'Proex'. Bombardier requested its government to meet with Brazilian negotiators to gain an understanding of the use of Proex and attempt to negotiate the removal of Proex. Bi-lateral negotiations having failed, Canada filed to open a WTO/DSB Panel in 1996. The dispute continues to this day.

While the Canadians have managed to put Proex under investigation by the WTO Panel, their efforts have also resulted in the DSB's evaluation of their own subsidies to Bombardier. The Canadian subsidies grant attractive lending terms to airlines, which is the main reason that Bombardier maintains its present market share. Purchasing aircraft is an expensive ordeal and the financing terms have a significant impact on the overall price (price and interests owed for loan) to the customer. Embraer and Bombardier are competitors, and research shows that if the Canadian subsidies did not exist, Embraer's sales would be more favorable to the customer. The Brazilian government does not offer similar exporting subsidies to that of the Canadians. To compensate for the lack of subsidies, Embraer will seek ways to maintain its performance internationally, while demanding that the DSB rule against the subsidies benefiting Bombardier.

Background

Dispute over Proex Subsidies

In 1991, the Brazilian Ministry of Foreign Relations set up an export financing system called Proex, which offers foreign buyers of Brazilian exports direct loans or interest equalization subsidies. Since 1994, Embraer has used the latter type of financing on its sales of regional aircrafts. Proex was created to account for higher interest rates charged by banks over purchases made in Brazil, also known as 'Brazil Risk.' Indeed, Proex has been interpreted by the Minister of Foreign Relations, Luis Felipe Lampreia, as a means to level the playing field with foreign companies. Embraer has used Proex on 85% of its exports, totaling 726 aircrafts to date (Dec. 2000). The export subsidy is available for exports of capital goods, automobiles and auto parts, and consumer goods.

History of Legal Proceedings

On 3 November 1996, pursuant to the WTO Dispute Settlement Body rules, Canada requested consultations with Brazil in the WTO to discuss the specifications and legality of Proex. The fruitless discussions and negotiations caused Canada to open a panel in the WTO/DSB to evaluate the fairness of Proex, claiming that Proex was negatively affecting Bombardier's sales and its aircraft industry. Brazil complied with the Panel's requests for data related to its exports. On 14 April 1999, the Panel ruled that Proex constituted an unfair subsidy, and requested that the Brazilian Government remove it. After further consideration, the Panel narrowed its decision on August 20 1999. The Panel found that the conditions of the equalization program were too favorable, and ruled that the financing conditions be restructured to match Organization for Economic Cooperation and Development (OECD) standards, which are legally accepted by the WTO. The Brazilian trade representatives resorted to Article 21.5 of the DSU to appeal the ruling, arguing that the panel did not fully comprehend the function of Proex, which is to account for the higher interest rate set on loans used to purchase or invest in Brazilian exports. Also, they argued that the OECD terms were established by developed countries, and did not suit developing countries' contexts.

Even though the WTO Annex of Trade in Aircrafts has special terms applying to trade in the aircraft-manufacturing sector, these rules did not have any significant effect on the ruling of the DSB Panel in this dispute.

The WTO Agreement on Subsidies and Countervailing Measures (ASCM) prohibits most subsidies, especially the export-related ones, though certain types are allowed by Member States based on certain conditions. ASCM does not have specific clauses dealing with the Proex type of financing program. Indeed, Proex is unique in that the subsidy is neither allocated to the exporter or importer, but is paid to the financial institution providing the loan for purchasing the Brazilian good. The DSB Panel analyzed how the Agreement stood on the use of Proex, and ruled that it constituted an unfair subsidy under Article 3.1 (a). The ASCM allows developing countries to have an eight-year phase-out period of their subsidies. However, this was based on the assumption that the level of subsidies would not increase above their 1991 level. Brazil had increased its expenditures on Proex since 1991, yet Brazil argued that the subsidies budget was not increased during the period. However the panel found that the actual expenditure value did increase, regardless of the budget level appropriated for the loans. Additionally, the Panel found that Brazil failed to phase-out Proex by the end of the transition period. Consequently, the Panel recommended that Brazil withdraw the subsidies within 90 days.

The original ruling against Brazil to eliminate the Proex system was changed in August 1999, so that the applied interest rates satisfied OECD standards (or some other appropriate market benchmark). Changes to Proex will have to be approved by the Ministry of Development, Industry, and Commerce (MDIC), before it can be

redesigned by the BNDES bank. The following table shows the financing terms of the new Proex, which matches the US Federal Reserve market benchmark:

Proex I	Proex III
Up to 100% coverage	Up to 85% coverage
Pays up to 3.8% equalization subsidy	Pays up to 2.5% equalization subsidy
Max. Duration: 15 years	Max. Duration: 10 years

Proex Export Financing Terms

History of the Dispute

Date	Event
1996	Bombardier approaches the Canadian government to request talks with the Brazilian government
1996	Brazil and Canada have informal discussions
March 1997	Brazil requests consultations on Canadian subsidies. Both Canada and Brazil request Panels in the DSB.
April 14, 1999	Report WT/DS46/R finds Proex to be an illegal subsidy according to Art.1 of the ASCM; contingent on Art.3.1(a), not (k). Told to withdraw within 90 days.
May 13, 1999	Brazil appeals aspects of Report. Appellant submission.
May 18, 1999	Canada also sends Appellant submission.
May 28, 1999	Both countries reply to the Appeals
June 17, 1999	Appellate Hearing
Aug 20, 1999	Formal decision of Panels for members to change their subsidies.* The Appellate Body decision narrowed the previous ruling on Proex, so that the required changes only involved using Proex interest rates to OECD standards (or some other appropriate market benchmark).
Nov 18, 1999	Canada reports on implementation.
Nov 23, 1999	Brazil seeks remedies under Art.21.5, and Canada follows suit
May 9, 2000	Compliance heard by Panel: TPC was acceptable, Canada Account was not; Brazil had not complied.
May 22, 2000	Brazil appeals the findings of May 9 th .
July 21, 2000	DSB denies appeal by Brazil. Decision means that 900 Embraer orders have to avoid using Proex I.
Dec 12, 2000	Brazil advises the DSB of the changes it made to Proex, and claims that Proex has been brought into compliance with the SCM Agreement. Brazil halted the use of Proex on exports until the decision by the Panel

	expected to be made within the next few months.
Feb 11, 2001	Canada decides to retaliate through a ban of Brazilian beef. Brazilian delegation meets with Canadian delegation to negotiate on the removal of the ban. NAFTA phytosanitary inspection teams visit Brazilian farms.
Mar 8, 2001	The beef ban is lifted.

* On Nov. 19th, 1999, the Brazilian Central Bank issues a circular letter reducing the Proex interest rate from 3.8% to 2.5% (10 year). Resolution No. 2,667: interest rate must equal US Treasury Bond (10 year) + 0.2% spread per year.

Canada's Indirect Retaliation

The tension caused by the trade dispute regarding aircraft has expanded to impact other sectors of both economies, exemplified when Canada imposed a ban on Brazilian beef, claiming the presence of the 'Mad-Cow' disease (which leads to the 'Jacob Spongi-form' disease in humans after its consumption). The loss of market access to NAFTA countries roused bitterness and anger among Brazilian beef exporters, and the Ministry of Agriculture demanded that the President retaliate accordingly. The Canadian government's ban on Brazilian beef was an extremely controversial move, considering the potential negative consequences of a trade war to Canadian businesses in comparison to Brazilian companies. While there are around 90 Brazilian companies in Canada, there are 1.2 thousand Canadian businesses in Brazil. Canadian exports to Brazil amount to US\$ 720 million annually, in comparison with US\$ 93 million of Brazilian exports to Canada. The nature of Canada and Brazil's trade relations heightens the need to resolve the dispute before it becomes an all-out bi-lateral trade war, which would not benefit either party.

Commercial Aspects

The Growth of the Regional Aircraft Industry

To better understand the vigorous efforts by Bombardier to have the Proex subsidies removed, we need to examine the market size and growth of regional aircraft production. The constant growth of the regional aircraft market has made it a very attractive industry--one in which huge sales explain the ferocious competition between Embraer and Bombardier. Since the late 1980's, airline companies have increasingly preferred jet engine aircrafts over smaller turbo-prop airplanes. The advantages of jet engine aircrafts over turbo-props earned them significant popularity amongst passengers and airlines because of their speed, comfort and perceived safety relative to turboprops.¹ Regional jets are perceived as a solution to the growing problem of airport

¹ Babikian, "The growth of regional travel".

congestion, due to growing air travel frequency, by replacing turboprops, expanding hub operations, allowing ‘hub-bypass’ operations, and offering new point-to-point flights². Forecast International predicts that the demand for regional aircraft in the next couple of decades will be as follows:

	2001 - 2010	2011 - 2020	Total
Up to 60-seat jets	1,989	1,636	3,625
Value / US\$ ml.	\$33,813	\$27,812	\$61,625
60- to 90-seat jets	1,094	1,365	2,459
Value /US\$ ml.	\$19,692	\$24,570	\$44,262

We can see that the market for jets of up to 60-seats will be worth US\$ 61.6 billion in the next two decades, while the market for jets between 60 and 90 seats will be worth US\$ 44.3 billion. Another source predicts that the regional aircraft market will be worth US\$ 96.1 billion in the next 10 years.³ As can be seen, there is huge market potential for the sale of such aircrafts around the world, and since there are presently only 2 significant players in this sector, it becomes clearer why the subsidies dispute between Canada and Brazil has been so heated. It also shows that the sooner this dispute is settled and the subsidies are brought into line with WTO rules, the greater the sales Embraer will win in the future, assuming that the value of Embraer jets will have an overall advantage over Bombardier’s.

Embraer

The new Proex financing conditions would raise the cost of Embraer's aircraft. According to *Instituto de Estudos para o Desenvolvimento Industrial (IEDI)*, the price of one plane would rise by approximately US\$ 1.0 million. Considering that the average price of its jets is US\$ 17 million, the rise represents a 6% increase. Moreover, since the expected sales volume of Embraer for 2002 is approximately 240 jets, the overall cost increase will be less than US\$ 240 million (Note: some aircraft sales may not use Proex at all).

Bombardier

Bombardier has long been manufacturing transportation parts and products, and it has a subsidiary specifically related to aircrafts called “Bombardier Aerospace”. Although

² Ibid.

³ Press Release, Forecast International.

this subsidiary was selling more aircrafts than Embraer in 2000, it was not as profitable as that of Embraer. While the Canadian subsidiary's profit was US\$ 281 million in 2000, Embraer's was US\$ 353 million.

Research and Development

As a high-technology industry, the aircraft industry is known to invest heavily in R&D activities because manufacturers are constantly striving to improve their aircrafts' technical features to make them safer, faster and more efficient. Historically, large commercial jet producers have been heavily subsidized by their respective governments. Indeed, this was the reason behind the Annex 'Agreement on Trade in Civil Aircraft' to GATT. Regional aircraft firms also spend a lot on R&D; however, their government support has not been as intensive as with the large commercial jet manufacturers.

Comparing Bombardier and Embraer

The fact that Bombardier and Embraer are the only two significant players in the regional aircraft market, and are competitively so close means that competitiveness is intense and pricing becomes a key determinant of better value. In 1999, the regional aircraft market sold 247 aircrafts. Bombardier had 41% (101 jets) of the regional aircraft market, while Embraer had 38% (94 jets), and Fairchild Dornier (a German-American firm) had 21% (52 jets). Although there is differentiation in features of each manufacturer's airplanes, the differences are small. The following table compares the main qualities of each company's 50-seat aircrafts: Embraer's ERJ 145 ER and Bombardier's CRJ 200 ER.

	Embraer ERJ-145 ER	Bombardier CRJ-200 ER
Cruise Speed /knots	464	450
Fuel Economy **	4	6
Aircraft Operating Cost *** /US\$ per Block Hour	921	958
Interior design & features **	3	4

* Price before any government subsidy/support

** Flugrevue Rating: 1: highest, 10, lowest

*** Planebusiness article

The following table compares the aircraft prices of the two companies with different financing programs:

Price in US\$ Millions

Form of Purchase	Embraer ERJ 145 ER	Form of Purchase	Bombardier CRJ-200 ER
Cash	17.1	Cash	18.2
Proex I	19.0	Loans with previous financing programs	18.5
Proex III	20.0	Loans with current programs	19.0
<i>Proex IV (temporary)</i>	<i>20.2</i>	<i>Loans with changed subsidies (EDC, etc.)</i>	<i>20.5</i>
<i>Loans without Proex</i>	<i>20.5</i>	<i>Loans without any government-backed financing programs</i>	<i>> 21.0</i>

Note: Prices take into account all lending terms provided through government programs available to the companies.

Even though the cash price of Embraer's aircraft is one million US dollars less than Bombardier's, the Canadian aircrafts are more attractive because of the financing terms. Unlike in Brazil, government backed financing programs exist in Canada that offer: loan guarantees, equity guarantees, residual value guarantees and first year loss deficiency guarantees (provided by Investissement Quebec), all of which create more favorable lending terms to the foreign buyer. Additionally, there are a few government-backed loans programs, such as the EDC, which acts as a prohibitive subsidy.⁴ It becomes clear that if the Canadian subsidies are removed or restructured, the pricing of Embraer's jets becomes more attractive.

Economic

Comparing Economic Conditions in Canada and Brazil

Brazil and Canada have significant differences in their economic conditions and infrastructure. Other than higher performance by Canada in economic indicators, such as standards of living and social welfare, there are a few specific differences affecting the aircraft manufacturers illustrated below:

⁴ Marray, 'Locked Horns'.

(Data for 2000)

	Brazil	Canada
Country Risk Rating ⁵	BB	AA
Transportation Costs ⁶		
Rail	2.88	1.17
Trucks	3.27	2.46
Port Costs	5.87	0.30
R&D Expenditures		
Tax Credit Offered	N/A (except for IT sector)	20%
Expenditure / GDP	0.7%	2.6%
Expenditure in Private Sector	31%	58%

The significant gap in transportation costs and R&D incentives between the two nations highlights the setback to Embraer caused by the Brazilian economic conditions.

Facts about Embraer

Embraer is the largest Brazilian exporter since 1998, with exports valued at US\$ 2.7 billion in the year 2000. It employs 12,400 workers in its four manufacturing locations around the country, though 9,000 are located at headquarters in Sao Jose dos Campos, São Paulo. It imports many parts from various countries for strategic reasons, especially reciprocal contract obligations. *Reciprocal contract obligations* is when foreign countries agree to buy certain number of jets in exchange for their supplying specific parts. In 1998, the company imported US\$ 886 million in parts, with tariffs that are paid upon entry into the country, but returned upon export according to the 'duty drawback Law R.6.197.' The Brazilian Government therefore does not actually receive tariffs from the imports of Embraer on the parts that become part of the final plane. The Government does benefit from the company's exports because it owns 30% of its shares, a result of privatization in 1994. In 2000, net profit was US\$ 353 million, from which the government earned some profits.

More importantly, Embraer 's success has been considered symbolic of Brazil's high-tech capacities. It has been used to show that a developing country like Brazil can compete internationally in a sector that involves highly specialized skills and technology. Indeed, it has been showcased to foreigners as a standard of manufactured goods 'Made in Brazil'. The chief of the Commercial Policy Division of Itamaraty, Minister Alcides Prates, called Embraer the Brazilian "Swiss Watch" at the Intermodal

⁵ Moody's International Country Risk Index.

⁶ World Roads Statistics; Roads and Railways.

South America Conference in 2000.⁷ Many developing countries have been drawn to the company's performance as a reminder of what their companies may also be capable.

It is clear that the Brazilian Government, especially Itamaraty, has great interest in the performance of Embraer. It has become a stop on country tours of foreign ministers and representatives, as happened in March of 2001 when British Prime Minister Tony Blair visited Brazil to reinforce UK-Brazil relations. Also, Itamaraty has used the aircraft producer in arguments that developing countries' economic strengths are not limited to the traditional sectors, such as agriculture, garments, or raw material extraction.

Policy

For these reasons and others Itamaraty has been reluctant to oblige by the new Proex restrictions imposed on Embraer by the WTO DSB. The other main reason is the need to question Canada's own export assistance tools and subsidies. Embraer has sent documents to Itamaraty stating the types of Government support that it believed Bombardier was receiving. The Brazilian trade representatives then requested a panel to evaluate programs like the Canada Account and TPC. These panels were opened on 23 July 1998. The panel ruled on the legality and the specific changes that need to take place on August 20th 1999. Although the Canadians complied with the DSB requests, the Brazilian representatives were not satisfied and complained that full compliance had not been reached. Another panel was convened 23 May 1999 to review Canadian compliance with the previous ruling on its subsidy programs. As we can see, Itamaraty has been and will continue to push to 'level the playing field' for subsidies with Canada.

Brazil's foreign trade policy involves opening foreign markets for national goods, promoting its own exports, and liberalizing its borders to imports. In 1999, the government took a tougher stance on improving the trade balance, after deciding that exporting was an effective way to attract hard foreign currency to control the growing external debt. There are several government programs to promote and facilitate the exports by Brazilian companies. The following are Government bodies that have policies aimed at increasing exports to improve Brazil's trade balance:

- Ministry of Finance: sees growth in exports as a way to obtain strong foreign currency, which should help the nation to manage its external debt. Regulates the fiscal incentives given to companies in Brazil.
- MDIC: increasing Brazilian companies' export capabilities as an opportunity to expand their market bases, and to improve the economic climate in the country.
- BNDES (branch of MDIC): Renovating Ports program; securing funds for exports (through a joint-guarantee fund); amplifying the activities and budget of

⁷ "Não é apenas montadora", April 14, 2000.

- the Exim department; proposals for the exemption of taxes designated for export; and the introduction of ‘Easy Export’ a program to facilitate exporting by smaller enterprises.
- Ministry of Transportation: has a policy to modernize Brazilian ports to reduce shipping costs.

Research and Development in Brazil

Compared to other nations, Brazil currently spends little on research and development. A UN study released in March of 2001 ranked Brazil 43rd out of 72 countries in the level of technological development. This result astounded many groups in Brazil, and lead several agencies to demand that the government allocate higher resources to R&D policies. In 1997, it spent only 0.7% of its GDP, compared to Canada’s 2.7%, or the OECD nations that spend on average 2.2%.⁸ Moreover, the public sector provides about 75% of Brazilian R&D funding, compared to 25% in the Newly-Industrialized Countries (NIC’s). In the NIC’s, the private sector plays a major role in the development of new technologies and research, which many economists argue helped the economies develop such strong industries over the past two decades.⁹ Even though there have been increases in private sector investments in R&D, there remains a weak institutional structure for joint R&D activities, poor information exchange, and inexperience in cooperation with the public sector.¹⁰ In 1996, the Government had a multi-year plan to raise R&D investment to 1.5% of GDP by the year 2005. The main priority of this plan was to increase the percentage of R&D expenditure by the private sector, from its current 25% to 40%, while expanding the amount of resources available for science and technology.¹¹ The World Bank was engaged in defining this plan, and has continued to support this effort through cooperative policy dialogues. Additionally, the plan aimed to “improve tax and fiscal incentives to encourage R&D.”¹² Indeed, the only sector in Brazil that receives fiscal incentives for R&D activities is Information Technology (IT), which has the IT Law (“Lei Informática”, Law 8.248/91).

The Information Technology Law (Lei Informática)

The IT Law program was implemented in 1991 by MDIC, and has been very effective in promoting R&D activities in the IT sector through tax credits. The concept behind the law was that if a company in the IT sector produced according to certain conditions, it would receive certain fiscal benefits. The conditions included that a company:

⁸ World Bank, “Brazil –Science and Technology Reform Operation”, 1997.

⁹ Ibid.

¹⁰ Ibid.

¹¹ Ibid.

¹² Ibid.

- Industrialized its outputs at least to a minimum procedure standard called “Processo Produtivo Básico” (PPB);
- Invested at least 5 % of its revenues in R&D, including 2 % towards joint programs with universities or research institutes; and
- Obtained ISO 9000 certification for its products.

Fiscal benefits for the IT company included:

- Exemption of the Industrial Production tax (IPI) from its output (which could amount to 15% of the product’s costs); and,
- Income Tax credit of up to 50% of R&D expenditures.

This law motivated the IT companies to shift their production strategies for higher production levels, and get quality certification (ISO 9000), while promoting joint R&D efforts between the private sector and public research institutes and universities.

This law expired on 29 October 1999, with the possibility of being extended if approved by the Congress. The new IT Law was designed by Deputy Júlio Semeghini (PSDB-SP), and approved on 21 November 1999, with slight modifications. The tax incentive is now done through the exemption of the IPI (industrial production) tax, instead of tax credit from a company’s income tax. Both income and IPI taxes are collected both federally and locally, where 21.5% of income tax is collected by the state with the rest going to the central government. Similarly, 21.5% of the IPI tax is collected by each state, 22.5% by each municipality and the rest by the central government.

Political Significance of the Dispute

Proex

The DSB Panel ruling on Proex as an illegal subsidy has disappointed many politicians and several Ministries in Brazil. Having designed the Proex I, and been the leading body responsible for maintaining the subsidy, the MDIC was most displeased with the ruling. Also disappointed was the Ministry of Foreign Relations who advocated the purpose of Proex throughout the duration of the dispute. Both these Ministries have already dedicated enormous efforts arguing to the DSB Panel that Proex does not confer a benefit to the buyer through the “financial contribution”, and thus is not an illegal subsidy.¹³

Embraer uses around 80% of Proex’s budget for its exports, which is understandable considering that aircraft are extremely costly products and in turn the

¹³ SCM: Definition of a Subsidy, ASCM. WTO Website.

credits of its financing terms are also expensive. Proex is promoted by the BNDES bank because it enables small businesses to export their products. Indeed, small companies are the primary users of Proex, after Embraer, amounting to just under US\$ 100 million annually.

Stakeholders

The following are the main stakeholders who will be involved in Embraer's strategies to compensate for the restricted Proex, while endeavoring to put an end to the dispute with the Canadians:

The Ministry of Development, Industry and Commerce (MDIC)

The MDIC is responsible for several issues including: monitoring, orienting, protecting and regulating industrial development; tourism; industrial property rights and patent protection rules; and development of foreign trade. The Ministry was a strong supporter of Proex, playing a key role in its inception and design in 1991. Subsequently, it was responsible for redesigning Proex, as requested by the DSB Panel. It was this Ministry's responsibility to formulate the conditions of Proex so that it would satisfy the requirements specified by the Panel in Report 'WT/DS46/R'. The changes were made after receiving a resolution by the government's Monetary Council on 6 December 2000. The Minister is Mr. Alcides Tápias, an active organizer of several of the current economic development programs in place.

The MDIC's responsibilities also involve participation in international trade negotiations, as well as the implementation of programs and activities related to foreign trade. Indeed, the Chamber of Foreign Trade (CAMEX) is part of the Ministry, setting the major policy decisions on foreign trade for Brazil. The executive of CAMEX, Roberto Giannetti da Fonseca participated in the design of PROEX, and has been a strong supporter of this measure, and other export support mechanisms over the past decade. Another department in this Ministry is the Secretariat for Foreign Trade (SECEX), responsible for the analytical work involved in preparing foreign trade policy decisions, including the formulation of Proex. The Secretariat of Industrial Technology, STI, is responsible for designing economic policies for the development of industrial technologies. Also, the National Bank of Economic and Social Development (BNDES) is located within this Ministry, designing policies to assist in the development of the economic sectors of Brazil.

Ministry of Science and Technology (MCT)

The Ministry of Science and Technology is responsible for the formulation and implementation of national policies on science and technology. It aims for the

improvement of scientific capabilities and knowledge, through training programs, and the development of technology to the benefit of the whole country. Its goal is to create a climate conducive to research and development, and innovation. This may include developing R&D programs jointly run by private and public sector organizations, including universities.

The Ministry of Science and Technology have several R&D policies aimed at developing public research institutions for use by the government bodies, private companies or universities. In cooperation with the MDIC, the Ministry helped prepare and pass the law the IT Law with administrative work, promotion and political influence. MDIC designed and implemented the IT Law.

The structure of MCT includes several agencies and technical commissions working on specific issues of technology, such as biosafety or nuclear energy. MCT also has an agency responsible for the development of scientific and technological development that manages major research programs and offers grants for scientific research programs around Brazil.

The MCT guides the implementation of the IT Law (8.248/91) through the Secretariat of Information Policy (SEPIN). In the field of foreign trade, it has been involved with specific issues, such as e-commerce, lowering tariffs charged upon remittance of profits abroad from technology investments, and foreign technology transfer. The Minister is Mr. Ronaldo Sadenberg.

Ministry of Transportation

The Ministry of Transportation is responsible for all policies related to transportation in Brazil. The Minister is Mr. Jose Henrique de Almeida Souza, who is a strong advocate of privatizing the transportation sectors of Brazil. He was involved in designing the program called “Develop Brazil”, a series of programs to upgrade the transportation infrastructure of Brazil, including international routes to the rest of South America.

Ministry of Foreign Relations (Itamaraty)

This Ministry is highly engaged in international negotiations, including those relating to trade. They have, and will continue to play an important role in bringing about a solution to the dispute with the Canada. The Minister, Dr. Celso Lafer, has repeatedly stated the need to continue negotiations with Canada over the aircraft subsidies issue, and has also stood firm on maintaining Proex,. He has also stressed the need to clarify to the WTO/DSB the role Proex plays for Brazilian exporters.

Canadian Department of Foreign Affairs and International Trade

The Canadian trade representatives have challenged Proex and campaigned to in an effort to prove the legality of existing Canadian subsidies benefiting its aircraft industries. Their tough stance on Proex reflects the pressure from Bombardier and other parts suppliers who fear the growing competition from the Brazilian rival. The Canadian trade representatives recently challenged the dispute Panel that specified the needed changes in order for Proex to become legally acceptable. Specifically, the Canadian delegation demanded that an additional 'risk fee' be charged on all financial transactions through Proex. They claim such risk fees to be standard practice, and point out that such a fee is missing from Proex III.

Medium-to-Large Businesses

It is mostly medium-to-large businesses that invest in research and development in Brazil. Only a minor portion of smaller enterprises in Brazil undertakes R&D due to the difficulties in undertaking R&D activities. Among the difficulties that companies face are: the high levels of bureaucracy, a lack of financial support for investing in such activities, the lack of government programs facilitating the acquisition of technological equipment; as well as the relative deficit of highly-trained technological researchers.¹⁴ Indeed, these are the reasons for the lack of R&D expenditures by Brazilian businesses. However, there is an increasing trend among medium and larger companies to put more efforts into R&D as a way to differentiate themselves in their markets, leading to increased market share and competitive advantages.

Exporters Using Proex

The businesses that presently benefit for Proex will oppose having stricter finance conditions as required by the WTO/DSB. Their main interest is to increase their exports abroad. They will need to be informed of any other alternative form of export credit programs that are developed in the future, as it is a relatively new field for most companies. Most companies only discovered Proex in the late 90's, even though it became available in 1991.

Federation of Industries

The aim of the Federations of Industries in Brazil is to create better economic conditions for businesses and industries to operate. They act as a forum for discussion and debate on economic issues affecting their businesses, whether through conferences, meetings, or consultations with experts on the field of debate. The Federations are also engaged in attracting foreign investments, providing information on Government policies affecting businesses, and in developing specific sectors of the economy, such as biotechnology or IT.

¹⁴ World Bank report, 1997.

Business associations have requested that tax incentives similar to those under the IT Law be given in the past few years to other sectors of the economy. The leading voice from this group is the Federation of Industries of the Brazilian states. The Federation in Sao Paulo (FIESP) has written several papers regarding this demand, and published Op-Ed articles in the country's liberal newspapers.

The National Confederation of Industries (CNI) will be our strongest supporter in campaigning for this tax law, especially in administrative terms. The President of CNI, Mr. Carlos Moreira Ferreira, is also a Deputy of the state of São Paulo (PFL). He has been an active leader in legislative reforms that enhance Brazil's business and economic environment. His most tenuous effort has been promoting a vast tax reform to eliminate the complexities inherent in the existing Brazilian system.

Labor Party and Unions

The Brazilian Labor Party (Partido do Trabalhador, PT) has historically challenged government policies aimed at enhancing production technologies with the argument that such policies result in unemployment for workers. PT has also been a strong advocate of reinforcing labor unions, and the labor unions who make their opposition legislative policies to known publicly through demonstrations, protests and advocacy. The leader of PT is Mr. Lula da Silva, who has run for President in the past three elections, only to be second in the running. Rumors have it the Lula may have a chance of winning the elections in 2002, though it is too early to make a good prediction. Even though they do not have a large presence in Congress, their partial coalitions with other parties enables the Labor Party to have an influence on policies being debated in Congress.

Ministry of Finance

The Ministry of Finance is responsible for formulating and executing economic policy. It is responsible for several matters including: fiscal policy implementation, and tax collection; currency, credit, and financial institutions; budgetary and financial administration; and, administration of public and domestic debt. When making policy decisions, the Ministry of Finance must consider Brazil's heavy foreign debt. The Minister, Pedro Sampaio Malan, has held this position for a long time (since January 1995), and has performed his duties very effectively, earning him the respect of other politicians.

The Ministry of Finance estimated that with the IT Law, it was foregoing between 610 million Reals (R\$, Brazilian currency) and R\$ 1.3 billion each year. Thus, the Ministry of Finance complained about the extension of the law, which resulted in the lowering the law's of tax incentives. The Ministry has, however, recognized the increase in foreign investments attracted as a result of the law was, as well as the growing production from increased R&D expenditures in the IT industry.

Transportation Industry

The purpose of my proposal is to benefit Embraer. This necessitates preparing legislation that will affect the transportation industry and examining the Brazilian transportation industry. The current state of the Brazilian transportation infrastructure is relatively poor. There is much inefficiency including the extensive use of trucks to transport goods for long distances where rail transport would make more economic sense. However, through a series of privatization moves during the 1990's, more tracks are being transformed to offer efficient means of transportation, particularly in the southern region of Brazil. This industry will have to struggle to provide more transportation services over the already well-established trucking industry. Ports constitute further inefficient components of Brazil's transportation infrastructure. The current port systems are outdated and inefficient, and the cost of shipping products is extremely high by international standards. Businesses identified shipping costs as a main inhibitor to exporting goods. Indeed, the government has recognized this and written policies to renovate the ports.

The automobile and aircraft sectors enjoy better performance, though they still stand to benefit from government policies that encourage R&D because they invest the most in these activities.

Other Industries

Knowing that my proposal will affect other industries of Brazil, it is necessary to review the stakeholders from other industries who will also be impacted. Other than specific industries like pharmaceuticals, industries in Brazil tend to have relatively minor investments in R&D. Brazilian companies rate fairly low on the international scale of R&D activities.¹⁵ However, the reason for this is not a lack of interest, but rather a matter of the problems explained above, coupled with the view that resources yield higher returns when invested in other areas of business.

State Governors

State governors are interested in having stronger manufacturing industries in their states. Considering that they are constantly looking for ways to attract foreign investment into their states, they would welcome a measure that would lower the operating costs of firms in their state. At the same time, they are concerned about state tax collection. Governors in Brazil have already demonstrated the significance of this matter in the passage of a bill that reduces the state-level circulation tax, called ICMS, in 1996 (Law No.8.820/96). Their political pressure to amend the law was a success, and half a year after its inception, the law was removed.

¹⁵ World Bank, "Brazil –Science and Technology Reform Operation", 1997.

Similarly, some governors have been arguing against the IT Law because they fear that their state's loss of tax revenue has outweighed the economic benefits. In November of 2000, a group of governors campaigned against the extension of the IT law. However, their resistance was insufficient to stop Congress and the President from approving the extension.

Analysis Section

Policy Analysis

The Ministry of Foreign Relations currently supports further negotiations with the Canadian government over the aircraft subsidies dispute. In this case, the policy of diplomatic resolution of international contentions would be involved in any attempt to solve this trade dispute. My proposal would require the Brazilian diplomats to continue their diplomatic efforts with their Canadian counterparts; they would be encouraging them to restructure their subsidies to the aircraft industry. This effort will be key to meeting Embraer's overall objectives and Brazil's foreign trade policy.

The MIDC will see the restriction on Proex as a reduction in the tools and programs created to reach its goal of developing the exporting activities of the nation's businesses. The Ministry however, has designed other programs to promote exports, like the loans for exports administered through BNDES. There are loan programs designed for facilitating exporting by SME's administered by BNDES, though they have low funds.

My proposal of a tax credit for R&D would allow Embraer's export performance to continue at the present level in the short-term, and improve in the long-term, while allowing Itamaraty to continue its diplomacy efforts in pushing the dispute forward to a solution. While the proposal will not prevent the required changes set out by the DSB, which the Brazilian trade representatives have been fighting for over 5 years, it will create favorable conditions for companies to develop their technologies and comparative advantages, which in turn increases their chances of exporting their products.

How the Tax Credit Should Work

Following the standard used by most of the G8 countries, the tax credit given to R&D investments is deducted from the company's income tax owed to the government for the year. Any unused credits may be carried back 3 years or forward 10 years.¹⁶ This is the case when the tax credit is higher than the income tax owed for that year.

¹⁶ Lenjosek, 'Why and How Governments Support R&D'.

The R&D tax credit we propose will give a preferential tax credit (50%) to the transportation industry, and a lower tax credit (20%) to the other industries. It should be noted that the following industries would be exempt from the R&D tax bill:

- IT sector (including the telecommunications sector): this sector already benefits from the IT Law. It would be unfair for it to receive two tax credits over one type of expenditure.
- Petroleum industry: is still mostly government owned, and the government's National Petroleum Agency (ANP), which is responsible for overseeing the liberalization of the industry, already has specific R&D programs for private companies purchasing into the industry.

Brazil Cost

Over the past decade, the business community and economists have discovered setbacks caused to business' international competitiveness as a result of Brazil's financial and investment conditions. The term "Brazil Cost" was coined to refer to the existing conditions that hinder the efficient performance of a business domestically. Numerous studies have been conducted illustrating how specific factors of running a business in Brazil weigh on the production costs. The reasoning is that the factors of production in most foreign nations are not as high as in Brazil and so Brazilian companies are at a competitive disadvantage when competing internationally. Among the factors included in Brazil Cost are:

- Scarce availability of credit, i.e. high interest rates;
- Poor infrastructure (transportation, telecommunications, energy);
- Complex political system buried in bureaucracy;
- Complex and burdensome taxation system; and,
- Slow judicial system.

There are two goals in reducing the 'Brazil Cost': 1) to reduce the costs associated with running a business, leading to a more efficient business context and performance; and, 2) to lower the prices of Brazilian goods to make them more competitive internationally.

In the opening speech of a conference hosted by the Ministry of Science and Technology in March 2001, the President of the Institute of Industrial Development Studies (IEDI), Mr. Eugênio Staub, stated the problems that inhibit technological development and innovation in Brazil. According to Staub, these problems included "the small participation of the private sectors in national investments of R&D." and "timid nature of concessions of fiscal incentives spread across the various sectors."¹⁷ Mr. Staub also blames the government for applying financial resources in the area of

¹⁷ IEDI, Sep 2001.

science and technology inconsistently, noting that less was invested in the field between 1998 and 2000 than between 1994 and 1997. It is therefore clear why the IEDI, the main industrial think-tank in Brazil sees a tax incentive for R&D investments in all sectors of the economy as a valuable resource.

Legislation for tax credits on R&D investments would be a tool to improve the Brazil's business climate. Indeed the business environment in Brazil is not conducive to research and development. There is a lack of scientists and expert researchers because of the low-level of training available in the nation's universities and research institutions, the result of which has been a low rate of return on R&D investments in companies, who then choose instead to invest in other activities. Secondly, there are few Government-led research programs available that relate specifically to industrial production or business methods. The burden is placed on businesses; however, the initiative to begin investing in R&D requires intensive capital and there are few available resources to support or expedite R&D. In the case of transportation, the recent push by the Government to privatize some areas of this industry, called 'Sistema Nacional de Viação' (Law 1.176/95), has meant that the private sector will have a large role to play in improving industry conditions and efficiency. This gives rise to a strong need for lowering the costs associated with developing new technologies in the Brazilian transportation industry. The sectors that would greatly benefit from tax incentives for R&D are the automotive, railway, aeronautics, and the shipping ports. The government estimates that it would take US\$ 20 billion to restore the road and railway systems from their existing deteriorated conditions. Specifically for the ports, another US\$ 20 billion was estimated in order to lower loading and freight costs through modernization of the current system.

In light of budgetary difficulties and the subsequent failure of the Ministry of Science and Technology to properly implement their programs, the tax credit would be an effective alternative to promote R&D investments. Although resources are allocated to the Ministry, allocations fall short upon implementation because project budget allotments do not account for additional administrative costs such as staff, social taxes, taxes and debt coverage costs. Halfway through 2001, the Ministry only managed to apply 3.3% of its budget for 2001, i.e. R\$ 17.3 million out of R\$519 million. The result is that several of their programs do not have the resources to be implemented, and those that do obtain resources receive only tiny amounts. This leads one to argue that there needs to be another way for the Ministry to implement its R&D facilitation and promotion policies. A tax credit for the private sector would achieve these policies without encountering the budgetary constraints of the Ministry.

Commercial Analysis

Changing Proex

If the Brazilian government adapts Proex so as to abide by the DSB Panel's requirements, the end price of each aircraft exported by Embraer will rise. Embraer

needs to maintain the overall price as close to the current price as possible. It could theoretically achieve this by lowering the face value of its planes so that the end price, after taking into account interest payments from the loans, remains the same. However, the company's current financial conditions impede this, as the net profit remains lower than the increase from the changes to Proex. Even though Embraer's profits were over US\$ 300 million, and knowing that the extra burden from the changes to Proex would be around US\$ 300 million, the company already has plans for the profit, including building a new plant in São Paulo to keep up with demand.

Calculations of Impact From Using Proex III

As we saw before, the price of Embraer's 50-seater (ERJ 145 ER) is US\$ 18 million. And we also know that by using Proex III the end price to the customer rises by US\$ 1million, thereby increasing to US\$ 19 million per jet. The Price Elasticity of Demand (PED) is -0.7 for such aircrafts.

Exports:

Loss of Exports due to increase in Price from using Proex III:

P1= US\$18 million

P2= US\$19 million

PED¹⁸= - 0.7

Change in Demand of Embraer Aircrafts = -PED * Δ P
= -0.7 * (1 million/18 million) = -0.7 * 5.5%
= -0.039 = - 3.9%

Embraer's expected sales volume for 2002 is around 220 aircrafts, therefore the change in demand is:
=220* -0.039
=- 9 aircrafts

Assuming that Embraer's average sales volume for the next 5 years will be 200 aircrafts:
= 200 *-0.039
=- 8 aircrafts
For 5 years = 5 * -8
=- 40 aircrafts.

Therefore, the company can expect to sell 9 jets less in 2002, and 40 jets less in the next 5 years. In monetary figures we have:

The loss in export revenues in 2002 = 9 aircrafts * US\$ 18million

¹⁸ Estimate for short-run PED of aircrafts.

= US\$ **162 million**

The loss in export revenue for the next 5 years = 40 aircrafts * US\$18 million
= US\$ **720 million**

In terms of profit, we can expect the following:

The Net Profit Margin for Embraer for 2001 = 12%
So, the profit loss for 2002 = 0.12 * 162 million
= US\$ 20 million

And the profit loss for the next 5 years = 0.12 * 720 billion
= US\$ 86 million

To estimate the impact on the workforce we use the worker output rule. Knowing that the drop in sales is US\$ 162 ml., we get:

= 162 ml./ 1,000 ml. * 6,000
= 972 employees

However, since plant is at full capacity it seems unlikely to result in actual layoffs.

Applying the R&D Tax Credit

This section examines the commercial impact of implementing the R&D tax credit. To know the impact on Embraer, we need to know how much it spends on R&D:

Embraer spent US\$ 180 million on R&D in 2000. The company is expected to invest US\$ 900 million from 2001 to 2004 (approximately: US\$ 200 for 2001).

Assuming a tax credit of 50% is applied, the credit will start counting for R&D expenditures for the year 2002 onwards. Embraer is expected to potentially save US\$ 350 million from 2002 to 2004 (from US\$ 700 million in R&D spending).

In 2002, Embraer plans to spend US\$ 210 million in R&D, meaning that it will gain a tax credit of up to **US\$ 105 million**. Income before taxes is expected to be US\$ 350 million. With an income tax rate of 35%, the company will owe the government:
Income Tax owed in 2002 = 0.35 * 350 million = US\$ 122 million.

The tax credit only applies to whatever income tax is owed by the company. In 2002, therefore, it can be expected that Embraer will only have to pay:
Income tax owed - tax credit = 122 million – 105 million = US\$ 17 million

If all the money saved is used to lower the price of the jets through financing programs to the buyers, then:

$$\begin{aligned}\text{Drop in Price} &= 105 \text{ million} / 211 \text{ aircrafts} = \text{US\$ } 0.5 \text{ million per aircraft} \\ &= 0.5 / 19 \text{ million} = 0.026 = 2.6 \% \text{ drop in price}\end{aligned}$$

Using Price elasticity of demand:

$$\begin{aligned}\text{Change in Demand for Embraer jets} &= -0.7 * -0.026 \\ &= + 1.6 \% \\ &= 211 * 0.016 \\ &= 3.4 \text{ aircrafts per year in the short-run}\end{aligned}$$

And in the long-run the PED raises because customers have adapted to the price changes and had time to switch aircraft manufacturers:

$$\begin{aligned}&= \text{PED} * \Delta \text{Price} \\ &= -1.5^{19} * -0.026 \\ &= + 0.04 = 4 \% \\ \text{So, the actual increase in number of jets} &= 192 * 0.04 \\ &= 7.7 \text{ aircrafts per year in the long-run}\end{aligned}$$

In 5 years, Embraer will be able to recuperate around 31 jets in sales as a result of using the R&D tax credit. And since it will lose around 40 jets from the cut in Proex, the overall loss in sales of Embraer aircrafts will be around 9 jets in the next 5 years. **This implies that the R&D tax bill will recover around 80% of the burden from using Proex III.**

Therefore, the R&D tax credit would serve as a strong tool in permitting Embraer to maintain its end-price levels as close as possible to the Proex I level. Although a 50% tax credit would only recover a portion of the costs, the rest of the burden from adopting Proex III can be compensated by: profits, and the fact that tax credits should lead to additional R&D investments in the future, resulting in higher tax credit savings. Most importantly, it will improve the growth prospects of Embraer and enable Embraer to continue to compete with Bombardier, while ensuring greater innovation capacity through intensified R&D.

The savings from the R&D tax credit would also ensure that Embraer maintains the present level of jobs. Also, shareholders will benefit from the continued performance of the company [Note: Embraer sells shares at both the Sao Paulo Stock Exchange and NYSE]. Although the overall revenue level would remain slightly below the Proex I period, it can be expected that in the medium-to-long-term the increase in R&D activity should lead to improvements in aircraft design and specifications that increase performance and revenues. This comparative advantage may lead airlines to choose Embraer over Bombardier jets, *ceteris paribus*, assuming other things to be constant.

¹⁹ Estimate for Long-run PED of aircrafts.

Scenarios for Different R&D Tax Bills

While the coalition will push for the R&D tax bill proposal that grants companies maximum fiscal incentives, there is a possibility that modifications will be needed in order to get the bill ratified by the government. Resistance to the proposal will likely be aimed at the preferential incentives given to the transportation industry. There may be pressure to limit the approved preferential tax credit to the base level for all other companies: 15%. Therefore, we need to examine the following scenarios for the R&D tax bill:

- Scenario 1: 50% for all 5 years (2002-2006);
- Scenario 2: 50% for the 1st year, with reducing levels up to 2006, when the base level of 15% is applied;
- Scenario 3: 30% for the first 4 years (2002-2005), and the base rate level of 15% for 2006; and
- Scenario 4: No preferential level is given, so the base level rate of 15% is applied for the 5 years (2002-2006).

The following tables show calculations of how much resources can be saved at the different scenarios by Embraer:

Scenario 1

	2002	2003	2004	2005	2006	Total
R&D expenditure /US\$ million	210	230	250	300	320	1,310
Amount saved @ 50% /US\$ million	105	115	125	150	160	655

Scenario 2

	2002	2003	2004	2005	2006	Total
R&D expenditure /US\$ million	210	230	250	300	320	1,310
Tax Credit	50%	50%	40%	30%	15%	N/A
Amount saved /US\$ million	105	115	100	90	48	458

Scenario 3

	2002	2003	2004	2005	2006	Total
R&D expenditure /US\$ million	210	230	250	300	320	1,310
Tax Credit	30%	30%	30%	30%	15%	N/A

Amount saved /US\$ million	63	69	75	90	48	345
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Scenario 4

	2002	2003	2004	2005	2006	Total
R&D expenditure /US\$ million	210	230	250	300	320	1,310
Amount saved @ 15% /US\$ million	31.5	34.5	37.5	45	48	196.5

As can be seen from the tables above, Embraer stands to save between US\$ 196.5 million (Scenario 4- Least Favorable) to US\$ 655 million (Scenario 1- Most Favorable).

The Tax Credit bill will expire 31 December 2005. Upon expiration, the bill could be renewed for another four years, but only at the cross-section level of 15%. The Ministry of Finance will make the decision after evaluating the effectiveness of the bill during the initial 5 years.

Overall Result From Changes to Subsidies

The Canadian government provides several subsidies to its aerospace industry. Those benefiting Bombardier are:

- Canada Account
- Technology Partnerships Canada
- Invest Canada
- Province of Quebec
- Export Development Corporation (EDC)

The DSB Panel ruled that Canada Account and Technology Partnerships Canada had to be changed, and the Canadian government complied. The EDC, Invest Canada and Province of Quebec are still under investigation in the WTO/DSB, and are suspected of needing changes. Presently, these support mechanisms allow the company to export to risky markets while taking less risk when using Canada Account. Thus, there exists the need for Embraer to find an alternative way to compensate for this handicap, which will be the proposed R&D tax credit. The adaptations would result in a reduction in support to Bombardier in its research efforts to develop new products or acquire new technology. However, after the changes are implemented, the stricter conditions on loans will negatively impact Bombardier.

It is estimated that if the EDC, Industry Canada, and Province Quebec subsidies were to be restructured according to WTO rules, Bombardier would experience a drop

in subsidies of roughly US\$ 200 million annually.²⁰ Meanwhile, the burden to Embraer from using Proex III would be small because of the implementation of the R&D bill, amounting to a net loss of around US\$ 40 million. Therefore, Embraer should gain an overall advantage over Bombardier, while both companies will be performing on a 'level playing field'.

Embraer would be better off with either Proex III or IV and Bombardier not having access to their existing illegal subsidies. The final price of Embraer jets would be around US \$ 1 million cheaper than its rival's jets. Therefore, Brazil needs to reach an agreement with Canada to restructure its illegal subsidies according to WTO rules, while agreeing to do likewise with Proex. The Government can even argue that it is willing to add the exposure fee to Proex (turning it into Proex IV), as requested by the Canadians, and Embraer will still be competitively better off.

Economic Analysis

Although the new conditions to be placed on Proex would inflict a noticeable commercial impact on Embraer, the overall damage is more significant. Embraer's symbolic stature: the the country's largest exporter and competing internationally in a high-tech sector, means that there is more at stake to the Government, the Brazilian people, and the reputation of Brazilian products abroad. The Government wants to ensure the well being of Embraer because several departments and politicians have revered it in public speeches. Many Brazilians are aware of Embraer, and admire the company because of its success story of moving from a State-owned firm to the lead exporter in the nation. Indeed, various business journals have written about Embraer's case as a success story. In fact, a campaign called "Made in Brazil" in which Brazilian products are promoted abroad has used the aircraft producer as a leading indicator of the quality level of Brazilian products.

External Debt

In order to be able to speculate what possible legislative solutions are feasible, we need to understand the significance of Brazil's external debt, and how it affects the government's budget. The external debt places a huge weight on the Government bodies' ability to finance budgeted activities because the government spends significant amounts to service its foreign debt. As a result, the Ministry of Science and Technology has not been able to implement its R&D promotion programs as stated in its policies. Indeed, the government finds itself obliged to cut back on social policy investments, such as health and education, in order to meet its financial obligations of foreign debt.

²⁰ Bejerman, 2001.

Over the last decade, the foreign debt has been an enormous concern in Brazilian politics because it has accounted for 40% - 50% of GDP. Furthermore, a large portion of the Ministry of Finance's revenues goes to servicing the debt, while attempting to reduce it. The government's main strategy to tackle this problem has been to improve the trade balance through increased exports in order to collect hard foreign currency to reduce the external debt. This is why the Brazilian Government designed PROEX in 1991. PROEX provides more favorable lending conditions to foreign buyers, thereby encouraging higher exports of Brazilian goods and services. It can therefore be seen as a tool to tilt the trade balance in Brazil's favor by encouraging exports.

Effect of Restricting Proex

Exporters using the Proex Equalization program would have their final prices raised. As stated above, Embraer jets will end up costing about US\$ 1 million more per jet for the customer. The actual selling price remains the same, but the amount owed by the customer after accounting for interest rate charges will be higher than with the previous Proex (version I). The impact will be small to other exporters using Proex because most of the exports involve lower value products.

Brazil will export about 8 jets less per year, amounting to US\$ 144 million; while importing US\$ 100 million less, since there will be no need for the foreign aircraft parts. The end result is a negative impact on Brazil's trade balance of US\$ 44 million. There should be no effect on productivity because Embraer is already working at almost full capacity. Similarly, the impact should be too small to affect wages of the employees. Consumers, i.e. the airlines, will be less well off because of the increase in price of the aircrafts.

Effect of Granting R&D Tax Credits

In the short-run, the R&D tax credit should allow for some fall in prices by most companies. Embraer will use the kept income taxes to lower the final price to its customers. In the long-run, the tax incentive should lead to higher exports because of the reduced transportation costs resulting from the R&D tax law. Also, the increase in R&D spending should lead to better products through innovation, thereby favoring customer welfare. Production and productivity levels should increase in the long-run.

The IT Sector

To better comprehend the economic benefits from adopting a R&D tax credit, we can look at the implications of the IT Law to the Brazilian IT companies. The Ministry of Science and Technology carried out a study that evaluates the impact of the

IT Law 8.248/91 on the Brazilian IT industry.²¹ Among the study's findings are the following:

FACTS:

- R&D investments increased during the period of 1993 to 1998 from R\$ 299 million to R\$ 742 million. Averaging 22% growth per annum.
- Out of 1,591 applications for the tax incentives, 1,121 were accepted, i.e. 70% approval rate; and 107 were accepted for the Income Tax exemption, i.e. 9% of requests.
- From 272 companies, 94 used Income Tax incentive, i.e. 34%.
- During 1994-1998, intra-firm R&D expenditures increased from R\$ 224 to R\$342 million, amounting to an annual increase of 11% in spending.
- About a quarter of expenditures went to joint public research programs.
- There is a concentration of R&D investment: 90% by 30 companies.
- The IT Law attracted Multi-National Corporations (MNCs) to establish in Brazil to produce goods that were being imported up to that point.
- Overall, there was an increase in revenues by the companies of 52% between 1994 and 1996.

OPINIONS:

- All companies interviewed considered the tax incentives, both IPI and Income Tax exemption, to be very important for their competitiveness and their technological development;
- 84% changed their technology policy in terms of amplifying their local production and developing new product lines, increasing their R&D expenditures, and amplifying their investments in training of technicians and engineers; and,
- 95% found that R&D activities were considered a determining factor in their firm's competitiveness.

RESULTING R&D ACTIVITIES:

- An improvement in planning and following up on medium to long-term R&D activities;
- Improvement in cooperation with public research and technical institutes;
- Modernization of production lines; and,
- Creation of new product-lines.

The improvement in production performance by the firms was achieved through:

- Optimization of production processes;
- Increased production efficiency;
- Reduction in product development cycle;
- Implementation of quality verification systems;

²¹ MCT: IT Law study.

- Better up-stream integration with the company's suppliers;
- Development of new technologies; and
- Reduction in faulty outputs, thereby reducing aggregate costs.

The report concluded that among the external benefits experienced was the increase in revenues by the companies and in turn the higher volume of taxes paid to the government.

Accounting for Taxes Foregone

By granting tax credits to companies investing in R&D, the government (Ministry of Finance) will forego collecting some of their income taxes. While the nature of the R&D tax bill will imply granting greater amounts of tax credits to companies than the IT Law did, it is not too much greater:

- The transportation industry is 1.5 times the size of the IT sector, which would imply that greater tax credits would have to be given, but the industry invests, on average, less than half of what the IT sector does. So, the tax credit volume given to the transportation industry will be over half of what is given to the IT sector.
- The rest of the industries in Brazil spend relatively little in R&D, meaning that only small volumes of tax credits would have to be given to the companies. The only industries that spend much on R&D are the pharmaceutical, chemical, petroleum (which is exempt from this proposed bill), and engineering industries. Studies show that the IT sector's R&D expenditures represents 26% of all R&D spent in Brazil. So, considering that the proposed tax credit for the other industries will be:
= $15\% / 50\% = 30\%$
We can estimate that the tax credit volume towards the other industries will be:
= $((1/0.26) * \text{IT volume}) * 30\%$
= $1.2 * \text{IT volume}$

So, the volume of tax credits expected for the R&D tax bill will be:
= $0.5 * \text{IT volume}$ [transportation industry] + $1.2 * \text{IT volume}$ [other industries]
= **1.7 * IT volume**

So, the R&D tax bill will grant less than **twice the amount** of tax credits currently offered by the IT Law to the IT sector. Estimates vary for what the IT Law grants annually from between US\$ 280 million²² and US\$ 470 million.²³ Therefore, we can expect the R&D tax bill to be granting an annual amount of tax credits between **US\$ 500 million and US\$ 800 million.**

²² Department of Budget estimate, Godinho, F. 9/25/1999

²³ Ministry of Finance estimate, Godinho, F. 9/25/1999

Compensating for Foregone Taxes

To make up for the uncollected corporate taxes, the government can use the Proex resources that were freed-up from redesigning the financing subsidy, i.e. Proex III. The changes to Proex reduced its budget allocation from US\$ 2.7 billion in 1997 to US\$ 820 million for 2000,²⁴ and US\$ 1.1 billion for 2001, resulting in over US\$ 1.6 billion being liberated. The government should be persuaded that a portion of these US\$ 1.6 billion be directed towards accounting for the taxes foregone by the R&D tax bill, which should amount to less than half of this value.

Additionally, even though there will be a deficit in taxes collected by the government in the short-run, the medium to long-term outcomes will more than compensate for this because:

- The reduction in costs in the transportation sector will lead to greater commercial transactions and exports. In turn, more taxes will be paid to the government, as well as causing a positive tilt on the national trade balance;
- There will be an increase in production by the parts suppliers of the transportation industry, which will lead to greater tax payments to the Ministry of Finance; and,
- The overall increase in R&D investments by the various industries of Brazil will lead to the economic advantages outlined above (see IT Law) with additional spillover effects due to the broader reach of the bill to numerous industries.

Political Analysis

How Politics Work in Brazil

Brazil is a presidential and federative republic with considerable decentralized federalism, yet there is an aspect of politics that is different in Brazil when compared to, for instance, the American political system (see Annex A). Brazilian voters often perceive local issues as very important, while paying little attention to the major legislative agendas of deputies or senators.²⁵ Therefore, legislative members must work differently if they are to secure the support and votes of the citizens. Instead of capitulating on broad ideological positions or national policies, they must look at what issues affect the people in their localities.²⁶ In order for them to secure votes, they must defer heavily to state-level politicians.²⁷ Also, according to Anthony Pezzola, “Legislators often pursue policies that cater to specific interest groups, almost

²⁴ Goyos, April 2001

²⁵ Pezzola, Univ. of Washington.

²⁶ Ibid.

²⁷ Ibid.

exclusively business as most other political interests are poorly organized and lack financial resources, in order to attract campaign contributions.”²⁸ Federal deputies often have a ‘dobradinha’ (electoral double-up) with local-level candidates, where the former provides funds to the latter, who in turn instructs voters to vote for the federal candidate.²⁹ This aspect implies that a different approach is needed when attempting to get the legislative body to approve your proposed bill or law amendment.

Restructuring Proex

Ministry of Foreign Relations (Itamaraty):

The Ministry of Foreign Relations has placed a lot of effort in negotiating the dispute with the Canadians.

They want to put an end to this dispute for several reasons:

- The lingering situation is creating a bad image on Itamaraty’s abilities to effectively negotiate;
- There is a shift of focus to other current trade issues, for example the US soybeans dispute;
- Itamaraty hopes to prevent the recurrence of Canada’s indirect retaliation through banning Brazilian beef exports due to unfounded allegations that they were contaminated with BSE
- The Ministry wants to avoid direct retaliation from Canada through the US\$1 billion granted by the WTO DSB.

On the other hand, the Ministry of Foreign Relations is unwilling to make the required changes because it wants the DSB to understand that Proex does not grant any real benefit to Embraer as the DSB concluded in its report WT/DS46/R. The Minister Celso Lafer, like his predecessor Luiz Felipe Lampreia, has repeatedly stated that he condemns the panel’s ruling as "myopic" and that it does not take into account the context of Brazil's economy.

Emphasis will need to be on how the proposal will lead the Canadian government to adapt their subsidies in return. As has been illustrated above that Bombardier receives great benefits from the Canada First program, so both sides would have to make amendments to their subsidy programs, saving face to Itamaraty.

Embraer has used most of Proex funds. In 1998 it used 90%, in 2000 82%, meaning that only a small portion is available for other exporters. It was only in 1998 that SME's began to take advantage of Proex, so up to that year the budget was not a

²⁸ Ibid.

²⁹ Ibid.

problem. However, ever since then, SME's have increasingly resorted to Proex, both in loans and interest rate equalization, and the limits of the budget have posed a problem. BNDES requested an increase in budget allocation for Proex so that small businesses can increase their exports.

Canadian Department of Foreign Affairs and International Trade

The difficulty that the Canadian trade representatives face is that on the one hand they want to comply with the investigation procedures of the DSB Panel of their subsidies, but on the other, the fact that the subsidies are granted confidentiality in Federal law means that they are constrained. However, Canadian trade representatives will emphasize the need to comply with the DSB procedures to other government agencies, because as a member of the WTO, they are expected to comply with the Agreement. Minister Pierre Pettigrew has been a strong advocate of restructuring the Brazilian export subsidy, while avoiding the criticisms concerning the legality of the Canadian subsidies and stating that Canada will fully comply with the demands of the WTO dispute settlement Panel. Even though previous attempts at reaching bi-lateral agreements on the subsidies issue failed, the representatives have recently announced that they are willing to negotiate the matter further, in hopes of ending the ongoing dispute. It is the Canadian government's policy that the export financing terms as specified by the OECD are completely acceptable,³⁰ and so, if Proex III indeed does satisfy these terms, then the Canadian government cannot argue against Proex III.

BNDES

The stricter subsidy conditions of Proex would reduce the amount taken by Embraer from the budget. The SME's would then have larger funds for Proex use with its exports. The assumption being that the budget for Proex remains unchanged. However, my proposal includes shifting the funds used previously of Proex I to account for the tax credits granted to Brazilian companies investing in R&D. Therefore, my proposal should free up some more funds to SME's to use Proex, however not significantly.

Embraer

Embraer clearly would oppose the modifications of Proex not only because it negatively impacts its exports, but also because it knows and firmly believes that the program does not provide any benefits that its Canadian counterpart does not already have. The company has constantly provided ample information and data regarding customers' benefits from Proex, and how Proex does not provide any additional benefit other than ensuring that the loans have the same conditions as those offered to Bombardier's customers.

³⁰ Department Of finance Canada, "Subsidies and countervailing measures paper"

Exporters Using Proex

Exporters using Proex will continue to pressure the Brazilian government to resist modifying the financing system. Arguments used before were that the WTO does not recognize the purpose of Proex, and how it does not provide them with any advantage. Some organizations are more critical of the WTO and argue that the WTO is damaging developing nations because WTO rules were designed to complement the economic conditions of developed countries. Indeed, this criticism has been reiterated by other groups opposing free trade, such as NGO's and political parties opposing the president's decision to open Brazil's markets without due thought to the consequences associated with it.

Pushing for Tax Credit for Research and Development

Embraer

Embraer would have to look for ways to compensate for the additional costs brought by the restrictions placed on Proex. Although there are possible options for compensating for the additional costs, such as sacrificing profits, these options would not be as effective or reliable as the proposal to have tax credits for R&D.

Embraer invested US\$ 180 million in research and development in 2000. It plans to spend US\$ 200 million in 2001 and US\$ 1.3 billion overall through 2005. R&D is key to product development in Embraer, and the constant growth in R&D investments since the privatization of the company illustrates the significant role it plays in Embraer's competitiveness. A tax credit for R&D would greatly benefit the Brazilian aircraft manufacturer. It would secure a significant amount of savings from the income tax owed to the government, which could be used to ensure that loans with favorable conditions are offered to its customers.

Ministry of Development, Industry and Commerce (MDIC)

The MDIC will be a strong supporter of the R&D tax credit proposal because they will want to implement an incentive for businesses to improve their products and increase their competitiveness. Having played a central role in the passing of the IT Law (No. 8.248/91), there is strong reason to believe that they would be interested in campaigning for this R&D proposal because of its similar nature.

The I.T. Law (No. 8.248/91) expired in October of 1999 but was extended on January 11th 2001 through Law No. 10.176. The extension however, changed the tax incentives to the IT companies so that instead of tax credits, the companies were exempt from paying the IPI tax on products purchased for R&D based on a diminishing schedule. In 2001, 95% of IPI taxes were exempted for these companies,

and in 2009, 60%, after which time the law would expire. Considering this, the new proposal should exclude the IT companies in order to avoid providing double the amount of tax incentives, as the other industries will receive.

The MDIC will need much lobbying to reform Proex because they designed the system, and have stood firmly behind its legality in international trade. The attractiveness of the R&D tax proposal to the objectives of the Ministry should, however, create sufficient internal support for this strategy.

Ministry of Science and Technology (MCT)

The Ministry of Science and technology would welcome the tax credit proposal because of the expansion of R&D activities by Brazilian companies that would result from this legislation. Considering that MCT helped design and implement the Law on IT (No. 8.248/91), they would similarly play a key role in designing the tax credit proposal for R&D.

The Ministry would be very active in arguing for the benefits of tax credits for R&D. Further, they would be able to provide research, such as econometric studies, illustrating the economic impact of providing this incentive to invest in research and development.

Federation of Industries

The Federations of Industries in Brazil have constantly been striving to improve the conditions for optimal business performance, which since the early 1990's has meant the reduction of 'Brazil Cost'. As explained above, reducing Brazil Cost involves making the conditions for running a company easier and less costly. A tax credit for research and development would fall into this effort, so the Federation of Industries should welcome it.

Medium-to-Large Businesses

Companies would certainly welcome the tax credit proposal, especially if they are already engaged in R&D, or if they plan to in the coming years. Even if without plans to invest in R&D activities, the proposal would be an incentive to begin conducting R&D activities. Considering that studies indicate the increasing trend for Brazilian companies to invest in R&D*, they will be very interested in the proposal.

Labor Party and Unions

We can expect that the PT party members will not vote harmoniously on the coalition's proposal. Almost half of the PT voted in favor of extending the IT Law.

This is surprising considering that the party's ideologies run counter to fiscal incentives that benefit capital owners and improve the manufacturing systems at the expense of jobs. However, the support for extending the IT Law may have been a result of some back-door politics of exchanging favors. In order to gain their support for the proposed bill, there should be clauses within the bill that will benefit workers, either through securing jobs or by improving their bargaining position relating to manufacturing processes. An attraction of the proposed bill is that boosting the transportation industries most likely means a greater number of jobs, since these industries tend to be labor intensive.

State Governors

Considering that income taxes and IPI taxes are collected at the state level, it would appear that the governors would be concerned by the negative impact that a tax credit would have on their tax revenues. However, with the IT Law there was very little opposition from the governors, mostly due to the political success in implementing the law in 1991, as well as the strength in the arguments advocating for Brazil to develop its IT sectors or otherwise be left behind in the global economy. Since the adoption of the law, the only opposition has come from Amazonio Mendes (PFL- Amazon) at the time of renewing/extending the law. Mendes was afraid that the law would attract investments away from the Free Trade Zone (FTZ) in Manaus, the capital of his state. Companies also benefit from tax credits in the FTZ of Manaus, as well as several other incentives that lure them there. The governor of the Amazon state therefore felt threatened by the IT law and sanctioned against it. He was in particular opposed to the exclusion of a clause that he had added to the Law which excluded states that had more than 50% of the national IT investments, which was Sao Paulo. Mendes built enough opposition in Congress to require a review of the Law in early January of 2001.³¹ On the 11th of January, however, the President sanctioned the Law without the clause that would have prohibited IT companies in Sao Paulo from receiving tax incentives. Mendes threatened to take the issue to the Supreme Court (Supremo Tribunal Federal), however, he did not go that far.

Another sign that the Brazilian governors are not seriously afraid of losing tax money through tax credits granted to companies investing in R&D is the fact that the tax incentives of the new IT Law are based on IPI taxes, not on income tax. The percentage of IPI taxes and income taxes collected at the state level is equal (i.e. 21.5%), yet unlike income tax, another 28.5% is collected by the municipalities. So, if local politicians were concerned about the decrease in tax revenues for their state budgets as a result of the IT Law, they would have opposed the change in the Law that shifted the tax credit to the IPI tax. As explained above, the municipal politicians have a strong influence on the politics in Congress, so it is difficult to argue that the local politicians' voices were not heard.

³¹ Estadão, 01/12/01.

Pushing the Canadians to Reform Their Subsidies

At the international level, the main challenge will be to move the Canadian government to carry out the changes to their subsidies that benefit Bombardier, and which, according to Embraer, give the Canadian manufacturer unfair advantages.

The Ministry of Foreign Affairs will be responsible for influencing the Canadian Department of Foreign Affairs to revise their subsidies. Embraer's role will be to help Itamaraty's arguments, mostly by supplying the information needed to negotiate more effectively with the Canadians. The type of information that Embraer will need to supply is in respect to its own activities relating to Proex, and any research it finds relating to subsidies Bombardier had or still has access to.

Embraer can also engage internationally on the issue by supporting Canadian interest groups that oppose the government subsidy programs granted to Bombardier. One example is an NGO called 'Probe International'. They have campaigned over the past 20 years to end some subsidy programs granted by organizations belonging to the Crown Corporation. Particularly, Probe International has focused on the Export Development Corporation (EDC). They claim that the export-financing program is very secretive, and that it funds projects that are environmentally harmful.

Legislative Analysis

To secure the passage of the R&D tax bill we need to ensure that there will be enough support at all levels of Government: the Sub-Committee on Industrial, Commercial and Brazil Cost Policies; the Committee of Economics, Industry and Commerce; the Chamber of Deputies; the Senate; and the President.

The following table shows the support that Fernando Henrique Cardoso's government currently holds in the Chamber of Deputies and in the Senate:

House	Total number of votes	Governing coalition	Neutral	Opposition
Senate	81	53	12	16
Chamber	513	308	75	130

Therefore, we can see that the government holds a slight majority in both Houses.³² And since the Committees have proportional party representation, we can expect similar proportions of support for the government at those levels as well. However, although it may seem that majority support already exists for the

³² Legislative Update, 2/20/2001; Brazil Council.

government, other factors affect the actual turnout of voting, like: absenteeism, travel, illness and other engagements. Therefore, the government coalition still needs to struggle to collect enough votes for passing their mandates. It should be noted that absenteeism is a predominant event in Congressional voting. Parties often use this to their advantage to ensure that their bills are passed by choosing voting schedules that conflict with the agenda of most members of their opposition party. It is not uncommon for significant bills to be voted on a late Friday afternoon.

The following table shows how the different parties are likely to vote on the R&D tax bill:

Political Party	Pro	Anti	Neutral
PSDB	X		
PMDB	X	X	
PFL	X	X	
PTB	X	X	
PST-PDT	X		
PT		X	X
PPB		X	
PSB – Pcdob		X	
PPS			X
PL – PSL			X

Sub-Committee on Industrial, Commercial and Brazil Cost Policies

This Sub-committee is composed of 20 members, presided by Mr. Márcio Fortes (PSDB). There are 11 members of the government's coalition. However, there are some members of the opposition who are likely to support our R&D tax bill. These are the Deputies of the most economically powerful states in Brazil (São Paulo, Rio de Janeiro, Minas Gerais, Rio Grande do Sul, and Santa Catarina). Assuming that these members are willing to support the bill, there should be approximately 14 votes.

Committee of Economics, Industry and Commerce

This Committee is composed of 50 members, presided by Deputy Marcos Cintra (PFL). There are 27 members who belong to the government's coalition. And after taking into account the members of the opposition from the economically most powerful states, the number rises to approximately 37 votes in favor of our bill.

Chamber of Deputies

Deputy Aécio Neves (PSDB) is the president of the Chamber. As mentioned above, the government's coalition has approximately 308 votes at this level. And if we were to take into account the more probable support from the Deputies representing the economically strongest states, we would get a total of 384 votes.

Senate

In the Senate of 81 members, the government's coalition has 53 votes. The current Senator presiding is Mr. Jader Barbalho (PMDB). Assuming that the Senators representing the most economically developed states will support our bill, the government's coalition will be at roughly 62 votes.

President

There should be little opposition at this level for approval of the bill, considering that we have three Ministries who will be pushing relentlessly for the R&D tax bill. By the time the bill reaches the President, he should have already been well informed of its benefits and existing broad support for it.

Legal Analysis

Domestic Laws

The law of Proex ensures that either loans or equalization financing is provided to exporters requesting it, provided that the applicant follows the proper procedure. As a member of the WTO, Brazil is required to oblige by its rulings, and so there are no legal obstacles to changing Proex to the required conditions. The Itamaraty has the legal right to demand the changes be made to Proex by the CAMEX agency. CAMEX, together with SECEX, would be responsible for making the appropriate changes to Resolution No. 2.214 (Nov. 1995), which stipulates the most recent rules of Proex. The changes set by the Panel have already been made to Proex, thereby turning it into Proex III. A WTO review body must still evaluate Proex III before the Panel accepts it. If and when it gets approved, all the agencies related to Proex (like the Bank of Brazil, 'Banco do Brasil') will be informed, and they will make the appropriate changes.

In order to make further changes that go beyond the requirements of the Panel, as may be necessary after negotiations with the Canadians, CAMEX must be convinced of the need to redesign the export financing system. CAMEX can then redesign the program, after the changes have been approved by Congress. The following pieces of legislation are specific to Proex:

- ‘Lei No. 10.184’ (July 1999): the main legal instrument regulating Proex, specifying the concessions and restrictions of the export-financing program. If further changes are to be made to Proex III, this Law will need to be amended accordingly and approved by Congress. Subsequently, CAMEX can direct the related agencies to act according to the new Law.
- ‘Carta Circular BACEN nº 2.881’ (November 1999): instructs the Bank of Brazil of the interest rates for the Proex equalization system. This Letter was prepared by the Central Bank and is directed at the Bank of Brazil, which carries out the logistics of Proex. So a new circular letter will need to be written when the proposed changes are made to Proex III.
- ‘Portaria MDIC No. 374’ (December 1999): lists the goods eligible for Proex financing. This list will not be affected, and so must be left unchanged.
- ‘Portaria Interministerial MF/ MICT nº 314’ (December 1995): regulates how Proex applies to services. This too will be left unchanged.
- ‘Resolução No. 2.799’ (December 2000): defines the criteria for Proex financing of aircraft exports. The applied interest rate will need to be calculated with each operation, based on the CIRR.

The proposed R&D tax bill has to fit with the existing tax credit rules and IT Law. The ‘Program of Industrial Capacity Building Support’ (PACTI) has Law No.9532 (Dec. 1997)³³ that accounts for fiscal incentives related to research and development. However, Law 9.532 is very limited in its scope and nature, and my proposal will have to be reconciled with it. Considering that my proposal grants more benefits than this Law, my proposal may replace it completely, or some of its clauses may be placed into my proposal. Specific exemptions will have to be written into my proposal for the IT and oil sectors, in order to avoid conflict with existing laws governing these sectors. Once passed, the R&D bill should last for a certain period, probably between 5 to 6 years, after which time it has to be voted in Chamber to be extended.

There is a method that the executive agencies can use to pass a piece of legislation in a matter of days, in order to avoid the parliamentary process altogether. By using a Provisional Measure (‘Medida Provisoria’_ MP), the bill is passed almost immediately in Congress because it does not need to be reviewed by the Deputies or Senators. MP’s are meant to be used only in times of national emergencies, such as when a natural disaster strikes a region, or the country is attacked. However, President Fernando Henrique Cardoso has used MP’s regularly to pass his policies, thereby making them very controversial. The only downside to using MP’s is that they have a duration of one month, and so must be reissued monthly to prolong the piece of

³³ EDISTEC, Unicamp.

legislation. This has resulted in a lot of administrative work for the President's staff who must constantly reissue MP's for the numerous Laws proposed by the President. Considering the controversy behind the use of MP's I recommend using the normal legislative procedure through Congress.

A duration of 5 years for the bill will allow it to be terminated or modified if external pressure, such as from a Free Trade Agreement with the EU or the Hemisphere (FTAA), is exercised on this R&D policy. However, if the government manages to keep this policy and wants to extend it, the bill will be open to extension, should the government decide in favor of it upon its expiration.

International Laws

The DSB Panel had a difficult time interpreting Proex because of the uniqueness of the financing system. While Proex's loan type of was simple to interpret, the equalization type was harder because the benefits are not accrued directly by the seller or the buyer. In fact, the question was raised of whether there were any benefits at all to either party engaged in the trade. The WTO has the following interpretation: A government loan is not considered as conferring a benefit unless there is a difference between the amount that the firm receiving the loan pays on the government loan and the amount a firm would pay on a comparable commercial loan.³⁴

However, the first decision by the Panel was that Proex did grant benefits that were illegal, and so the Panel ordered Proex to be banned. The Panel found at a later date, however, that Proex could be maintained as long as it was redesigned to fit international standards, such as OECD standards (see background section).

The Panel also evaluated and ordered the Canadian subsidies to be changed. There are still other subsidies that are under investigation, like the EDC or the Province Quebec. The evaluation process is being delayed by the Canadian government who has not provided sufficient information to the Panel, claiming that the financing programs are exempt from the 'Information Access Law' restricting the disclosure of data regarding the loans to the public.

Brazil has 'developing country' status in the WTO, meaning that it could invoke Article XVIII to request that this export promotion policy of Proex be exempt from WTO rules. In fact Brazil did request this exemption, however, the exemption is only granted for 8 years after WTO rules came into place. Hence, the transition stage has already expired. There is another rule in the ASCM that would negatively impact the Proex. This rule states that if a product is competitive (i.e. if it has over 3.5% of world market share for 2 consecutive years), then no subsidies are permitted for that nation's sector.

³⁴ SCM, WTO website, www.wto.org

The DSB Panel rulings on Proex by did not satisfy the Brazilian government because the Panels ruled Proex to be a subsidy for gaining an unfair advantage over other international competitors. Despite the Brazilian trade delegation's reiteration of the original and existing purpose of Proex, from the point of view of the WTO Panel, Proex was considered illegal because it offered benefits to Brazilian exporters. The Brazilian delegation, however, will continue to push for their interpretation of the export subsidy, though it remains uncertain how long it will take for them to convince the Panel that Proex simply levels the playing field in terms of interest rates offered on loans to foreign buyers. It would be more beneficial for Embraer to tackle the dispute through alternative strategies in cooperation with the Brazil government. , One possible strategy is the proposal outlined in this paper.

Canadian representatives are dissatisfied with the initial changes to Proex because there is no procedure guaranteeing that the changes have met the DSB requirements. Indeed, this "revealed a gap in the DSU, because there were no provisions to deal with a situation where a country introduced new measures and claimed compliance after 21.5 Panel had already rejected earlier efforts to show compliance."³⁵ Had there been a procedure to account for this situation, the Canadians could get an objective judgment by the DSB on compliance of the new Proex to the requirement as stipulated in the last report (WT/DS46/R).

The Panels ruled the Canadian subsidies, the Canada Account and Technology Partnerships of Canada (TPC), to be illegal according to the ASCM. This ruling led Brazil to continue challenging the Canadian subsidies with the hope that the DSB would also order the remaining subsidies to be changed or removed. The Brazilian government has already mentioned that it intends to challenge the Export Development Canada (EDC) program, which the Panel left out of its last rulings. The panel did not decide anything because there was a lack of information on the program. The Canadian government refused to supply information, claiming that such information was corporate and too secret and sensitive to be brought into the case. Although the Brazilian government, and the Panel itself, questioned the reasoning presented by the Canadian government, discussion on the matter was temporarily brought to an end. It is the intention of the Brazilian government and Embraer to analyze and evaluate the EDC in detail. Further, the Brazilian government has stated that it will investigate the loans made by the Crown Corporation to Bombardier, which the government of Brazil suspects to be at cut-rate levels. In addition, Embraer said that it will challenge other subsidies that it claims have benefited Bombardier including the Canada-Quebec Subsidiary Agreement on Industrial Development, and the Société du Développement Industriel du Quebec.

From the perspective of the WTO/GATT, there is nothing to prevent the Brazilian government from granting tax incentives to companies on investments in

³⁵ Inside Trade, Dec.15, 2000.

research and development. From a legal perspective, therefore, the only barrier to implementing my proposal is Brazilian legislation. However, under the WTO/GATT, no preferential incentives should be given to specific sectors of the economy. Article 8.2 (b) of the ASCM, however, allows special incentives for regions of a country that are economically disadvantaged, if a nation has a policy to develop that region.³⁶ My proposal will benefit all industries at one level, and the transportation industry at a higher level. The question therefore is if the WTO would consider the higher tax credit for R&D to the transportation industry as an incentive that benefits a specific sector, and thus illegal according to the WTO Agreement. In theory, the WTO should not rule the incentive to be beneficial to a specific sector because the transportation industry is comprised of several sectors.

Further, there is reason to believe that since the WTO has not yet challenged the existing IT Law No. 8.248/91, which grants tax benefits to IT companies investing in R&D, they should not have any basis to challenge the proposal for the transportation sector.

The part of my proposal for all sectors should not meet any legal challenges, considering that many developed countries already offer such tax incentives for investing in R&D through tax credits. The G8 countries all offer such tax credits, with only slight variations in the credit levels granted.³⁷ A study shows that Canada has the most beneficial R&D tax incentive program of all of the G8 nations.³⁸

³⁶ WTO, Art. 8.2 (b), ASCM

³⁷ Lenjosek, G., 1999

³⁸ Ibid.

Recommendation

My recommendation is for Embraer to campaign for a new tax law that grants tax credit to companies investing in research and development. The law will be two-tiered; one is specifically for the transportation industry, and the other for all other industries of the economy. Meanwhile, the Brazilian government will negotiate with the Canadians to push for reforms to Canadian subsidies to the aerospace industry, on condition that Proex is modified according to the requirements set forth in the DSB Panel decision.

A law granting tax credit on R&D investments will reduce the taxes owed by Embraer, thereby allowing it to compensate for the more limited version of Proex that will become available. Embraer can therefore prepare itself for the unfavorable conditions, without suffering too large an impact from the loss of global jet sales. Also, it gives more leverage to persuade the Canadian government to change its subsidies that now benefit Bombardier.

Comprehensive Strategy

The strategy will require building a coalition of domestic supporters of a tax law for research and development. This coalition will then begin a campaign called “Research and Development for Brazil’s Future” which will gain support of other groups to pass the proposed Law. The coalition will work on three strategic areas: legislative, institutional and media. Internationally, Embraer will convince the Ministry of Foreign Relations to negotiate and persuade their Canadian counterparts to agree to modify their subsidies according to any future WTO/DSB rulings. While both strategies are of similar importance, in order to achieve the overarching goal of resolving the subsidies dispute, the R&D bill needs to be passed in Brazil in order to allow for Brazil’s trade representatives to negotiate more effectively with the Canadians to resolve the whole case.

International Strategy

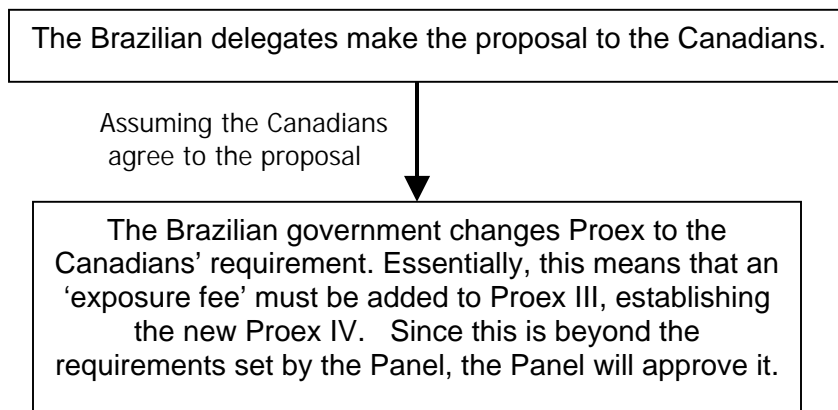
Objective: To convince the Canadian government to modify their subsidies so as to meet international standards as specified by the WTO/DSB.

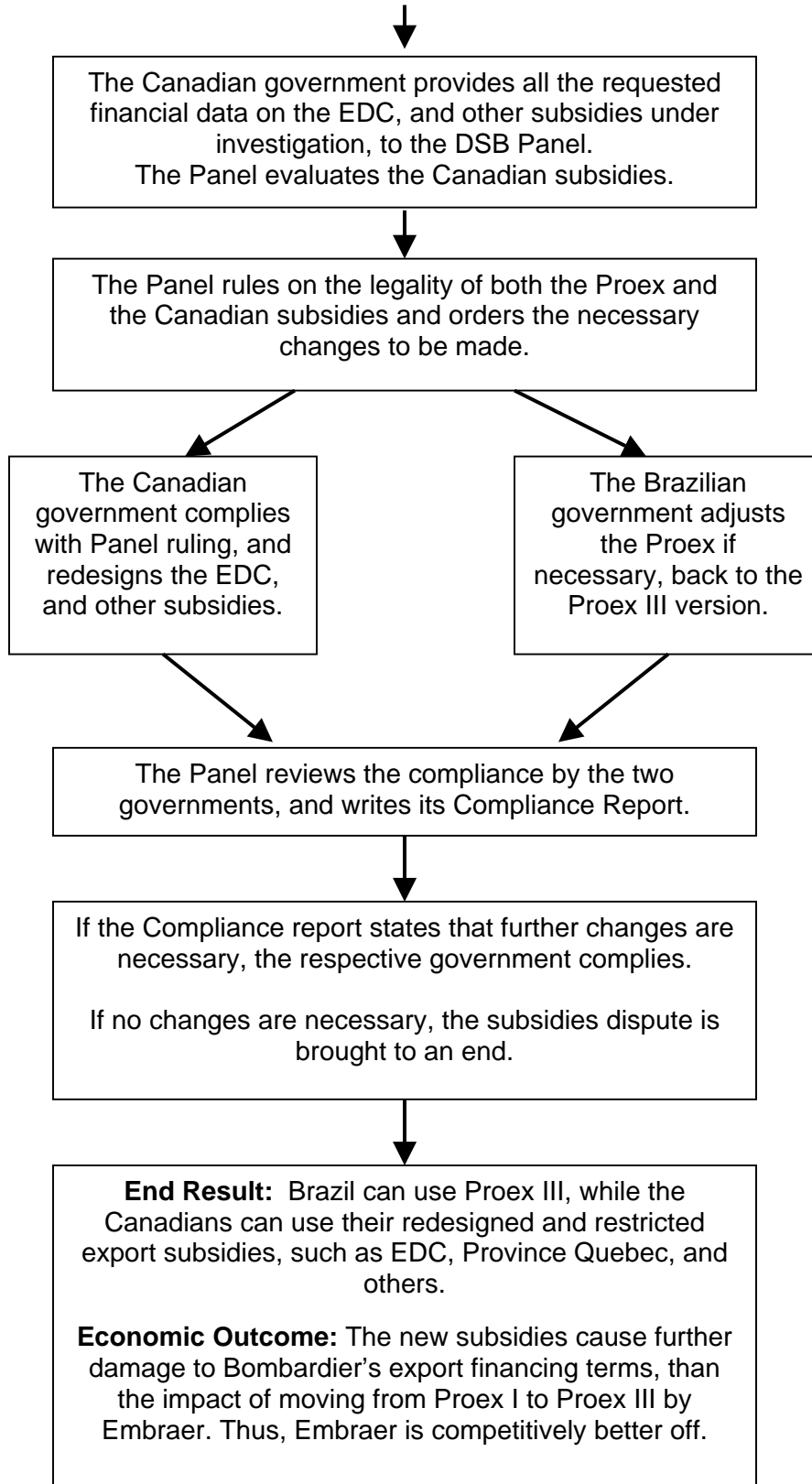
Cooperating with the Ministry of Foreign Relations

At the international level, the most important way that Embraer can be engaged is to help resolve the ongoing subsidies dispute by providing information to fortify Brazilian diplomats' arguments. Embraer has already been supplying financial information regarding the use of Proex for its exports to the Ministry of Foreign Relations since the Ministry first began meeting with the Canadian government. The company should continue to do so, and also research more thoroughly the details of the subsidies given to Bombardier. Economic studies demonstrating how the economic conditions in Canada provide better selling terms to exporters compared to the Brazilian context would be useful. This kind of research would put the Brazilian trade delegation in a much better position to argue its case that Proex does not grant any real benefits to Embraer's customers; and also that the Canadian government financing programs function as subsidies for Bombardier.

Embraer should also recommend a strategy to the Ministry of Foreign Relations that should end the subsidies dispute with Canada. Brazilian trade representatives can argue that since Proex is being changed according to the international requirements set out by the DSB, it is expected that the Canadians also comply and redesign their subsidies. Embraer's proposal would be for the Brazilian trade diplomats to meet with their Canadian counterparts and explain that if the Canadian government agrees to have all their subsidies going to the aircraft industry properly investigated by the DSB Panels, then the Brazilian government will change Proex as requested by the Canadians coupled with the condition that both sides agree to implement the DSB Panels' restrictions. The recommended negotiation process is outlined in the following section.

Recommended Negotiation Process





Negotiation Strategy

The Brazilian trade delegation will be entering negotiations that have existed since 1996. These longstanding negotiations will present a drawback because strong emotions have developed amongst the delegates, thereby shifting them towards a positional bargaining approach, which reduces the possibility of compromise. On the other hand, the long duration has caused both sides push harder to end the case. At any rate, the Brazilian delegation will need to approach the Canadians with an attitude towards reaching a compromise that satisfies the international community and export financing norms.

One aspect that must be clarified to the Canadians is the mounting support among developing countries to taking a critical stance regarding developed nations' subsidies. It has become increasingly apparent to developing countries that subsidies in the developed world are hampering the potential for poorer countries to increase their exports due to the trade distorting effect. The protests at Seattle's WTO Ministerial in 1999 involved this issue, and informed the world of the hypocrisy in the liberal rhetoric from developed nations. Since that time, a growing number of economists, NGO's and politicians have condemned the inherent hypocrisy of developed nations. This movement is strengthening the developing countries' position within the WTO in arguing for greater pressure on developed members to phase-out their subsidies, in the interest of having a working international trading system, which is the essence of the GATT/WTO.

The EDC provides financial support to companies of all sizes, especially smaller companies, and so the Canadians will be concerned about the effect on their Small-to-Medium Enterprises (SME's). However, it is only the loans given to the larger companies, like Bombardier, that concern the Brazilian delegates. Therefore, the Brazilian delegation should propose that only the financing terms of loans to large businesses should be modified according to DSB rules. This would make it more feasible for the Canadians to accept expediting the review of the EDC in the WTO in order to analyze its legality.

Support can be gained from NGO's that work towards increasing transparency in institutions, companies and governments. Transparency International (TI) is the main NGO in this field, and they should be approached to ask that they investigate the EDC and other Canadian export subsidies. TI works at all three levels, corporate, institutional, and government, therefore they will be effective in demanding greater transparency of the EDC, at all levels. In Canada the 'EDC Working Group', a coalition of Canadian human rights, labor, environmental and development organizations, has called on the federal government to require EDC to adhere to binding social and environmental assessment standards. They have proposed that Canada push at the international level for all export credit agencies to adopt the World

Bank standards as a minimum, particularly in the area of disclosure.³⁹ By proposing this idea to Canada, the Canadian delegation will need to realize that complying with World Bank standards on disclosure will give the impression to the rest of the world that Canada is willing to improve their export financing conditions as well as international export financing conditions. The argument for disclosure can be presented to the Canadians with findings from research that shows that “the disclosure obligations placed on World Bank, U.S. and other international financing agencies have not harmed the commercial interests of these agencies' clients - including many of the companies EDC services.”⁴⁰ Additionally, the Brazilian delegation can tell their counterparts that if progress is not made on the issue soon, that they will pressure the WTO to accept NGO input in the dispute settlement procedures so that the input can be used as legitimate information for legal arguments. Considering that there are many more NGO's who oppose EDC, than support it, this move would surely offset the Canadian arguments.

If the negotiations do not look promising up to this point, then the Brazilian delegation will have to remind the Canadians that trade retaliation, in the form of raised tariffs, will be much worse for Canada than Brazil. As stated above, Canadians export a lot more to Brazil than vice versa, and so if the DSB grants the Brazilians the right to retaliate, due to the illegal export financing by the Canadians for Air Wisconsin and Northwest, then a greater threat can be made to the Canadians.

The Canadian delegation will be reluctant to modify their export subsidies because of the importance they have on the Canadian companies' export performance. Considering that the Canadian economy relies heavily on exports, it can be expected that the negotiators will be under a lot of pressure not to change the legislature on the subsidies. Both sides will have to negotiate the possibility of restricting the future budgets of their own subsidies. By placing such restrictions, the parties show that they are taking a proactive approach to removing these subsidies. Even though the Brazilian side may propose that both sides remove all their subsidies as an agreement, the Canadian delegation will prefer some form of compromise that preserves as much of the export subsidies as possible. Therefore, the Brazilian delegation should prepare certain reforms for both sides' subsidies to be accepted and carried out within a certain time period. The Brazilian delegation can propose that Proex III will be changed to Proex IV, which includes an ‘exposure fee’. At the same time, they should propose to the Canadians that they reform the EDC, Invest Canada, and Province of Quebec, to a point where they are in line with international norms, and are transparent to society. The Brazilian delegation may propose what specific international norms should be applied, however the Canadian delegation may prefer to have the DSB decide, in which case the Brazilian delegation may have to agree to have the DSB determine what changes are necessary to the Canadian subsidies. On the basis that all arguments above have been made by the Brazilian delegation to the Canadian side, it is likely that the

³⁹ Freeman, A. 2000.

⁴⁰ Ibid.

Canadians will be willing to reach an agreement on how to reform their export subsidies.

Supporting Canadian NGO's

Besides the international NGO's that focus on increasing transparency of transactions by government and private institutions and organizations, there are Canadian NGO's that will be good allies to Brazil's negotiation. For instance, Probe International is an NGO based in Canada focusing on the Export Development Corporation (EDC) financing program. The organization has for almost 20 years scrutinized the numerous international projects financed through the EDC. They have written various articles in journals and newspapers across Canada opposing the EDC on grounds that the programs it sponsors are usually damaging to the environment. Probe International argues that because of the secretive nature of the agreements made in the EDC to finance projects abroad, the projects are not scrutinized properly, meaning that they tend to have no account for environmental or social impact in the countries needing the loan.

Embraer should contact the NGO and show their support for Probe's activities, and request that they continue to scrutinize the EDC loans granted to Bombardier, and request this information from them. Similarly, if Embraer discovers insightful information relating to substantial EDC subsidies given to Bombardier, they should send it to Probe International, so that they can act on this at the domestic level in Canada. Embraer may also provide some funding to the NGO.

Another potential ally is the Canadian Taxpayers Federation. The Federation is responsible for analyzing the use of taxes in Canada to satisfy the citizens' interests. Several articles have been written about the damaging effects of the Canadian subsidies that are supposed to be helping the fledging domestic sectors. In an article in January of 2001⁴¹, the Federation argues that the Canadian government is funding significant amounts to the aircraft industry on R&D projects, which is costing the taxpayers dearly. Therefore, they would be useful allies to pressuring the government to remove or lower the aircraft sectors' subsidies.

Justifying the R&D Tax Bill to the WTO

If the WTO questions the intentions of the R&D tax bill, the Brazilian trade delegates should be ready to justify its purpose. Brazil should argue that its 'developing country' status means that it is afforded special consideration in the WTO rules because its economy needs to adjust to modern global competition. This means that Brazil can maintain its development policies for longer than a developed country, if

⁴¹ "Taxpayers respond to Tobin's funding announcement favouring Bombardier".

properly justified. From this view, Brazil's effort to improve its transportation industries and infrastructure is understandable and should be seen as a legitimate domestic policy that will help the country adjust to the international trading world. Further, the WTO can be reminded that an efficient transportation system will favor the Brazilian citizens to travel, as well as companies in their supply chains, and enhance the conditions for international trade.

Additionally, there are no legal precedents for claiming that such policies run counter to the multilateral trading system. Most developed and some developing countries have had R&D fiscal incentives in place for decades. Most of their policies apply 'across-the-board' to their various sectors, and some grant preferential incentives to specific sectors. So, if the WTO were to dispute our proposed R&D tax bill, they will have an extensive challenge in bringing similar R&D policies around the world to a new standard. Even if it were to reach this point, the developed nations would be the ones with the most to lose, while Brazil's economy would be relatively unaffected.

Domestic Strategy

Objective: To campaign for a tax law granting tax credits for investments in R&D at two levels: a higher credit for the transportation industry, and a lower one for all other industries. The goal is to prepare Embraer for the negative impact from a restricted Proex subsidy by campaigning for a tax law that will save the company enough funds, and maintain its competitiveness.

Action Plan

Establish a Business Coalition

Embraer will form a coalition of domestic transportation companies who will definitely want the proposed tax law with the higher tax credit for their industry. They will be invited to attend a presentation on the purpose of the coalition, and the details of the campaign. During this meeting, they will be informed of the benefits that they will gain from the law, and how it will boost their competitiveness. Embraer will need to convince them of the need for the law, and the reasons behind the transportation sectors having a higher incentive than the others. Once this group is convinced and organized, the coalition will be expanded to other companies that engage heavily in research and development. Letters will be sent to these companies explaining the purpose of the coalition, and how they stand to benefit from it. The National Confederation of Industries (CNI) will be the forum for informing the members of the coalition about the need of the proposed tax law for the Brazilian economy. The federation not only already has a large membership of firms that are likely to join the coalition; they also have the facilities, expertise and resources for conducting and collecting economic research.

Establish a Legislative Coalition

The Ministry of Science and Technology, and the Ministry of Transportation will be the first legislative group to be contacted. Embraer will explain the proposed law, and give economic data of the benefits to be made to the companies and the economy as a whole. The Ministers will be ensured full support from the coalition, whose members will be identified to them, and then they will be told that this coalition will expand after the campaign begins. The Ministry of Development, Industry and Commerce (MDIC) will be invited separately to explain to them the similarity between this proposal and the IT Law (8.248/91). Embraer will explain to this Ministry that this proposal will not overlap with the IT Law, and that the whole economy stands to gain from it. Their experience in this field will be greatly appreciated, and again they must be ensured that there will be enough support both pragmatically and vocally. They will share the main difficulties experienced in passing the IT Law back in 1991, at least by those members who are still present in the Ministry, as well as the challenges to extending the Law in January of 2001. The legislative strategy will be shaped according to the information and recommendations they provide.

It will be important to get the approval of the proposal by the Ministry of Finance. However, they will take more convincing before they become part of the coalition, considering their main concern of the amount of tax revenues they will forego with such a tax bill.

Legislative Strategy

Lobbying

After building the business and political coalition, we need to start lobbying the local and state politicians to facilitate their understanding of the R&D tax bill and support it. As pointed out above, Congressmen are more likely to support policies that are endorsed by governors or mayors of their respective states. Members of the business coalition will need to contact their local political representatives, whether it is the mayor of their city or the governor of their state, and express their support for the R&D tax bill. These businesses should set up meetings with their respective politicians to clarify what the purpose of the bill is, and how it will raise the competitiveness of local firms, which should lead to job creation, the installation of new plants, and other spill-over effects to the whole economy. The business should also give a 'leave-behind' to their politicians, in case they are unable to arrange for a private meeting with them. The leave-behinds can either be a standard one prepared by the coalition personalized to the mayor or governor, or one written by the company.

Once the business coalition has made their local politicians aware of the advantages to their cities and states from having the R&D tax bill, our efforts should shift to the Congressional level. Support for our bill in Congress will come from a

majority of the government's (PSDB) coalition, and those who voted in favor of extending the IT Law earlier this year. We can send letters to them mentioning the date of when MDIC will introduce the bill into the Chamber. Along with these letters, should be memos explaining the benefits of the bill to the various groups in Brazil, while depicting the urgency of this bill and urging them to vote in favor (see Annex D). Similarly, we should send letters and memos to those Congressmen we believe are taking a neutral stance on this proposal, who are likely to be neutral towards the IT Law. Finally, our coalition should contact specific members of the opposition party to support the passage of the bill. Indeed, there was a surprising portion of the opposition coalition that voted in favor of the IT law, stating that they believe that greater R&D investments are needed in the Brazilian economy. This included members of the PT (Labor) party, which is surprising in that it clashes with the party's traditional stance of strongly opposing any policies that favor mechanization in production systems.

Indeed, we can expect opposition from the Labor party, and the Unions, which we have to tackle. We have two options:

- (1) Push ahead without the Labor party and hope that they do not instigate additional resistance in Government; or
- (2) Add clauses to the R&D tax bill that will make it more attractive to them. An idea would be to add a clause requiring applicants for the tax credit to recognize trade unions in their corporate planning sessions. At least one seat may have to be reserved in these meetings for members of their respective trade unions. In return, we expect the Labor party's support for the bill.

In Congress

The first step will be to introduce the R&D tax proposal to the Brazilian Congress. The Chamber of Deputies will hear the proposal presented by the President of the National Confederation of Industries (CNI), Mr. Carlos Ferreira, who will explain the reasoning behind the proposal, and the role it will play in supporting economic development of various industries. Once the Chamber has had time to consider the proposal, they will delegate the Committee on Economics, Industry and Commerce to evaluate the R&D tax proposal if they are convinced of the urgency of the proposal. Being the case, they will decide to include it in the year's legislative program. The coalition will need to strive to convince the members of the Committee of the importance of the proposal. This will be done through scheduled visits by key Members of the Coalition, phone calls, letters, and memos underlining the economic boost that the various industries will gain from the proposal.

The Ministry of Finance will be approached by representatives of the business coalition and the ministers of the political coalition to persuade the Ministry of the net effect of increased tax revenues owed from companies. Studies will show the growing performance resulting from the R&D tax incentive, and in turn this will lead to additional taxes owed to the government either through income tax, or other taxes

involved in business activities in Brazil, which as stated above are numerous. The coalition will need to present the Ministry of Finance with research showing the increase in taxes paid by the IT companies since the inception of the IT Law in 1991 compared to what would be paid without the IT Law. In particular, the coalition will need to clarify that the studies showing that the taxes foregone by the government from the IT Law amounted to between R\$ 610 million and R\$ 1.3 billion (approximately between US\$ 250 and US\$ 540 million) did not account for this increase in taxes paid resulting from increased business performance of the IT sector.

In order to appease the resistance expected from the segment of the PFL party, lead by Antonio Carlos Magalhães, who will be arguing against the proposal, they will need to be contacted and explained how the benefits should not distort investments flowing to the FTZ in Manaus, or from the Northeastern region. Studies will be sent to these PFL politicians indicating the difference in incentives between locating a company in the FTZ and anywhere else in the country, illustrating how the benefits from the R&D tax proposal are only minor in comparison. While the coalition will be lobbying the PFL to convince them that the poorer Northeast will benefit equally from the proposed law, they will be open to suggestions on adding clauses that grant higher tax incentives to that region. However, it will be made clear to them that this clause will only be added if they guarantee full support in Congress to approving the Law.

The coalition will also need to send ‘information packs’ about the economic implications of the tax proposal. These packs will include economic data of the expected benefits generally to the nation, as well as information particular to the state, and key municipalities. The specific information will include lists of the key companies that will stand to benefit within their state or district, with estimates for the increase in R&D expenditures, and expected increase in revenues from the resulting innovation of the local companies. Further, the information packs will include economic studies highlighting the expected increase in Foreign Direct Investments resulting from a business climate conducive to research and development.

Research Strategy

Further research will be needed in the following areas:

- Economic studies showing the spillover effects from R&D investments to other sectors and to society as a whole. Also, research estimating the job creation from the proposed bill, both in the R&D fields and at the production level. This can be found through thorough research in numerous public economic information sources, either in government agencies, or public universities.
- Economic research indicating the potential growth in FDI resulting from the incentive on R&D investments in Brazil. Research contracts should be ordered from the most reliable economic research institutes in Brazil. These include:

‘Instituto Economico Industrial’ (IEI), ‘Associação Nacional de Pesquisa, Desenvolvimento e Inovação’ (ANPEI), and ‘Rede Nacional de Pesquisa’ (RNP).

- Investigate whether Bombardier benefits from any other forms of government subsidies. Find details of the forms of subsidies offered by the Economic Development Corporation to Canadian firms. Also, quantify the financial support given to Bombardier.

Institutional Strategy

The issue of approval that was considered a problem by the IT companies who were applying for the tax exemptions must be dealt with in order to make the implementation of the R&D tax law more efficient and successful. SEPIN, the agency responsible for assessing the eligibility of companies for the tax incentive, will need to be given the necessary resources in order to make the approval process less bureaucratic. In order to achieve this, SEPIN should receive the computer equipment and software that will make registering faster and more reliable, as well as more staff to process the applications in order to cut down the workload of the existing staff. This step will ensure that companies will not be discouraged from applying for the tax exemption because of the sluggishness of going through the procedure.

Public Relations Strategy

My public relations strategy will involve several approaches to informing both companies, and politicians of the benefits of the tax proposal and the importance to Brazil’s economic development.

Companies

Companies will need to be informed about the benefits of the R&D tax proposal through newspaper articles, mailings, and business forums (especially those relating to economic development, R&D, and innovation).

Newspapers

The three newspapers most read by business executives and decision-makers are: the Gazeta Mercantil, o Estado de São Paulo, and O Globo. Advertising describing the benefit from the proposal should be purchased to be placed on the three newspapers on selected days of the week when readership is highest, namely Sunday, Monday and Tuesday. A half-page ad would be enough to explain the purpose of the proposal, where key figures are presented pointing to the increase in competitiveness of firms investing in R&D.

Op-Eds should be written to these three newspapers explaining the need for the tax proposal to boost the competitiveness of Brazilian businesses in order to be able to

compete abroad. Such emphasis will appeal to the readers because of the numerous articles pointing to the negative aspects of Brazilian performance internationally in business. There have been plenty of articles criticizing the lack of tools and infrastructure to allow companies to gain market presence abroad. Further, the growing concern about opening national borders to foreign goods has created fears that Brazilian companies are losing to foreign competitors and costing Brazilians their jobs. Although there have been many articles countering such arguments, particularly in the more liberal newspapers, like the *Estado do São Paulo*, they have not gained as much attention or acceptance as expected. Therefore, one strategy to reach the companies and the people is to emphasize how the R&D tax law will enhance the quality of Brazilian goods, thereby ensuring their international competitiveness.

Meetings will have to be arranged with the newspaper editors, to provide more convincing facts about the net long-run benefits of a tax credit for R&D investments, so as to counter the numerous reports showing how much the government is losing out on from the IT Law.

Mailings

Information mailings should be sent to medium-to-large businesses that are not already included in our business coalition. The information pieces sent to these companies will include a letter explaining the purpose of the R&D tax law; an explanation of how they stand to benefit from the extra credit provided to the transportation industry; economic research showing the return on investments in R&D in Brazil; studies showing the benefits that the IT Law brought to the IT sector; and a survey asking the companies about their intentions of investing in R&D (see Annex C). The purpose of the survey will be to collect estimates of how much the companies are planning to invest in R&D in the coming years, and how much more would be invested with the R&D tax bill in place. Analysis of the responses will allow for estimates of the growth in R&D resulting from the tax incentives of the bill, and also to allow for better government budget planning, ensuring that the bill remains viable for the Ministry of Finance.

Business Seminars

Seminars should be organized by the Federation of Industries to inform companies of all sizes about the benefits of having a policy conducive to higher R&D investments domestically. A few larger conferences will be held with a Panel of experts, and more entertainment to attract a higher group of guests from the business community. Banquets will accompany these as well as other entertainment. The panel presenting in the seminar will consist of a representative of Embraer, a leather company, a biotech company, a small electronics producer, and an economist. After the presentation, a Q&A session will allow the participants to field their concerns and doubts they may have about the R&D tax proposal. These seminars will be held in the Federation of Industries of key states that have strong industrial and manufacturing

industries. Advertising for the seminar will be carried out through the federations, and admission will be free of charge with a limit of two representatives per company who will be required to register in advance by mail or telephone.

Politicians

The task of informing politicians will involve using newspapers, a press conference, and a 'tele-novela' to inform the public of the R&D deficit in Brazil and the need to encourage R&D investments.

Newspapers

As mentioned, the three newspapers most read by business executives and decision-makers are: the *Gazeta Mercantil*, a *Folha de São Paulo*, and *O Globo*. While the *Folha* voices a slightly more liberal view, the *Globo* shows a more socialist perspective of issues, while the *Gazeta* is seen to be the most neutral newspaper in Brazil.⁴² A half-page ad should be purchased in the newspapers highlighting the economic benefits that an R&D tax credit brings to the company and industry, as well as the spillover effects to the economy and society as a whole. Op-Ed pieces should be sent to these newspapers to give statistics of the expected growth in R&D expected from the application of the law, as well as the increased returns to the businesses. Hopefully these statistics will at least be used by other regular Op-Ed writers of these newspapers. Op-Ed's will also be sent to other newspapers read by politicians in the most economically developed states, namely São Paulo, Rio de Janeiro, Minas Gerais, and Rio Grande do Sul. The newspapers in these states are: 'Estado de São Paulo', 'Litoral', 'Zona Sul', 'Gazeta Paulista', and 'Horizonte'.

Tele-Novela

Tele-novelas play an important role in modern Brazilian culture. Not only do they shape discussions at social gatherings and in the home, they also act as a guide to the social values and, more relevant in this case, inform the public of problems or new developments in the political and business sphere of the country. Soap operas have been used by interest groups to push specific issues to the front of people's minds and shift their opinions according to the group's agenda, such is the case with the AIDS epidemic. The aim is to turn the issue into a concern of the citizens who then demand that their local politicians act on it. This tactic was used in 1994 to push for a credit program for micro-enterprises in the services sector. A coalition of micro-enterprises convinced the director of a soap opera playing on *Globo* channel, which has the highest viewer ratings, to place the issue of the lack of credit for micro-and-small businesses in his soap opera. A few months later, a credit program that had been stagnant in

⁴² Regional Integration, Fiscal Federalism, and Local Politics in Brazil.

Congress was implemented by BNDES directed specifically at micro-entrepreneurs in the services sector.

Our coalition should convince the director of one of the prime-time soap operas (there are 3 soap-operas playing daily in the Globo channel alone) to insert the issue of a lack of R&D culture in Brazilian businesses. An idea would be to have a businessman facing difficulties in a highly competitive market, and realizing that in order for his business to outpace its rivals he needs to invest in R&D to differentiate their products. At this point the businessman should make sharp criticisms of how expensive it is to engage in R&D in Brazil, and even compare it to the situation in developed countries like the U.S. where there are various government sponsored R&D programs and incentives available for companies. This strategy should shape the public opinion about the importance of R&D in any economy. In turn, the public will more likely support the local politicians who campaign in favor of a bill that provides incentives for investing in R&D in Brazil.

Press Conference

A press conference should be held to announce to the media the introduction of the R&D tax proposal in Congress that will take place soon. The location should be either at the Science Department of the State University of Sao Paulo (USP), or at the Institute of Technological Development in Sao Paulo. While the former would show the educational benefit of having increased R&D activities in the business sector, the latter would convey a more professional image to the purpose of the proposal. Both are located in downtown Sao Paulo, thereby ensuring the presence of the media. Another option is to host the press conference at an innovation or technological trade show, where some media specialized in technological issues would already be present. A media advisory (see Annex D) will be sent out to the main newspapers, radio and television stations a week before the event.

At the press conference will be the President of the CNI, along with politicians supporting us, economic researchers, and perhaps an actor or actress from the soap opera. The actor or actress from the soap opera will explain how the R&D tax bill is proposed in the story, and how the character they represent states the need for such a bill in Brazil. The presence of a soap opera character at the press conference should assure a bigger media presence. The goal is to portray wide support from varied interest groups towards the R&D tax bill, and to clarify how it is not just the companies that benefit, but the whole economy.

Building Domestic Consensus on the Proposal

Political Coalition

When approaching the key ministers who we want part of our coalition, it must be made clear to them that this initiative emerged from a need for more R&D in Brazilian businesses. The Ministers should understand that the outcome from the R&D tax law will be a lot more significant than improving the competitiveness of domestic companies. It should be clarified how R&D has spillover effects to other sectors of an industry, and also to the economy as a whole. Further, it should be mentioned that job creation could be expected from increased R&D spending, not only through increased sales and exports, but also because of the jobs specific for R&D activities that will be opened. The choice of arguments to be emphasized will, of course depend on which specific politicians are in the meeting. For instance, when meeting with the Minister of Finance, evidence of the growth in tax collection from the IT firms benefiting from the IT Law needs to be provided. Or, when presenting the proposal to Congress, it should be highlighted the expected growth in research education programs that will be created as part of the agreement that benefiting companies will need to donate 1% of their R&D expenses to educational institutions specializing in science and research.

Political Opponents

Knowing that politicians in Brazil are hardly loyal to their party's central beliefs, we can approach members of the opposing groups individually to get them to support our bill. The expected opposition from the labor party should be reduced through our reconciliation of their interests of the R&D bill. Early discussions with politicians should indicate the form for the conditions that the politicians would like to see added to the bill in order to make it acceptable to them. Our coalition should be prepared to offer specific clauses that may for instance, require that a certain percentage of the labor force be unionized, or something along these lines.

Negotiating with the members of the political opposition in the PFL and PMDB parties, especially with Senator Antonio Carlos Magalhães, will be the coalition's most difficult challenge. Considering that combined the opposition forms a significant group in both the Senate and the Chamber, they could strike a blow to our efforts in passing the bill in Congress. In order to appease Senator Magalhães, we have to reassure him that the R&D tax bill will not affect the existing investment flows to the Northeastern region, or to the FTZ in Manaus. Here again our coalition needs to be prepared to offer some concessions in the form of clauses in the R&D bill granting higher fiscal benefits to companies located in the less-developed northeast region.

Plan Schedule

So, the plan is to build the coalition, then launch the media campaign, while pushing the bill up through Congress and finally intensifying our lobbying efforts to ensure that the bill is passed before the Presidential elections in October 2002. Here is a proposed schedule for our strategy:

Timetable for the Implementation of the R&D Tax Bill

	Phase 1		Phase 2			Phase 3		
	June 2001 - Oct 2001		Nov 2001 - March 2002			April 2002 - Aug 2002		
	Coalition Building		Media Campaign			Legislative Negotiation		
Action Plan	Political Coalition Building	Business Coalition Building	Editorials & Op-Eds	Paid TV & Newspaper Advertising	Press Conference; Soap Opera Broadcast	Lobbying with Deputies and Senators		
In Congress		Meetings with Deputies in Sub-Committee	Meetings with Deputies in Committee	Vote in Sub-Committee	Vote in Committee	Vote takes place in Chamber	Vote takes place in Senate	President ratifies the R&D Tax Bill

BUDGET (in US\$)

Item	Phase 1	Phase 2	Phase 3	Total
Revenues				600,000
Embraer contribution (seed grant)				300,000
CNI	-	-	-	86,000
Business Coalition contributions*				300,000
Expenses				
Conferences , meetings and seminars (incl. entertainment and administrative costs)	76,000	124,000	110,000	370,000
5 Large Conferences @ \$30,000 each	30,000	60,000	60,000	150,000
10 Seminars @ \$10,000 each	30,000	40,000	30,000	100,000
Speaker commissions @ 2,000 per speech	16,000	24,000	20,000	60,000
Lobbying Dinners @ 500 each	10,000	20,000	30,000	60,000
Personnel	95,000	125,000	125,000	345,000
Campaign Coordinator	25000	25000	25000	75,000
Clerical Staff hired	40000	40000	40000	120,000
CNI staff (part of CNI costs)	20,000	20,000	20,000	60,000
Media consultant		30,000	30,000	60,000
Legislative consultant	30,000	30,000	30,000	90,000
Administrative	2,500	2,500		5,000
Office Space Rental (part of CNI costs)				20,000
Supplies (part of CNI costs)				2,000
Telephone (part of CNI costs)				4,000
Postage	1,000	1,000		2,000
Printing and Publications	1,500	1,500		3,000
Publicity and Advertising		95,000	70,000	165,000
Paid newspaper advertising (20 F.P. ads @ 1000 each)		10,000	10,000	20,000
Paid TV advertising (incl. Actors' commission fees)		80,000	60,000	140,000
Press Conference (incl. press kits)		5,000		5,000
TOTAL Expenses	173,500	346,500	305,000	600,000

* Contribution per business dependent on number of employees:
Over 5,000: US\$ 5,000; Between 1,000 and 5,000: US\$ 2,500;
Between 500 – 1,000: US\$ 1,000; Up to 500: US\$ 500.

Appendix A: The Brazilian Political System

Brazil is a presidential and federative republic with considerable decentralized federalism. It has 26 states and the Federal District (Brasilia), and 5,581 municipalities. Even though the 1998 Constitution reestablished many of the prerogatives of the bicameral Congress, the president retains significant powers.⁴³ Other than an occasional delay by one of the three branches, the Brazilian government has a system of checks and balances (similar to the American system) that ensures its harmonious operation.⁴⁴

Presently, there are 21 Ministries in the Executive Branch. Those of interest in this project are described below. The President, Fernando Henrique Cardoso, has been in power since 1994, having been re-elected in 1998, and his term will come to an end in October of 2002. When he first became president, he assigned his own choices to most of the positions in the Ministries, and restructured the Ministries to give superior status to three of them: Planning, Civil Household, and Finance. In addition, he built a Political council to coordinate major political strategy and policy decisions. Also in the Executive branch are autonomous agencies, the Bank of Brazil (Banco do Brasil) and the Federal Savings Bank. A change in Law in 1997 allowed the President and state governors to be re-elected once in their positions. The next state elections for governors will take place in October 2002.

The legislative branch is composed of a 513-member Chamber of Deputies and an 81-member Senate. While Congress has a basic four-year term, Senators serve for 8 years. The States have unicameral legislatures elected at the same time as Congress. The municipalities have city councils with 4-year terms; elections at this level take place two years after state and national elections. Congress has administrative and fiscal autonomy, as well as full power over the budget. In certain circumstances, subject to an absolute majority secret vote, Congress can issue decrees not subject to presidential veto. Congress holds a very important role in setting national economic policy.⁴⁵

Because the d'Hondt method of proportional representation is used, conflict arises within parties, and there is little loyalty. Moreover, deputies rely on their own resources (up to US\$ 5 million for a federal deputy) for campaigning.⁴⁶ The Senate and Chamber of Deputies have legislative initiative; each has six and sixteen standing committees respectively, as well as a joint budget committee. The committees have the ability to approve or kill legislation. Presidencies of these committees are allocated among the parties on an annual rotational basis.

⁴³ Brazil Factbook 2001.

⁴⁴ Ibid.

⁴⁵ Ibid.

⁴⁶ Ibid.

For a bill to pass in the Senate and Chamber of Deputies, as well as in the Committees and Sub-committees, a 50% +1 vote is needed for a bill to be approved. So, in the case of the Senate, 41 votes (out of 81 Senators) are needed; in the Chamber, 257 votes (out of 513 Deputies) are needed for a bill to be passed. When a bill proposal is introduced into Congress, it is sent to the relevant Committee in the Chamber, and subsequently to three Sub-Committees. After deciding the appropriate Sub-Committee for the bill, the bill is debated by the members in that Sub-Committee. If it is approved, it is sent to a Plenary of the Committee and also discussed. The time for a bill to get through Sub-Committee tends to be around 2 to 3 months, and between 3 to 4 months at the Committee level. If it is approved by vote, it gets sent to the Chamber of Deputies, where it may take from 2 to 6 months (sometimes even longer). If the Deputies pass the bill, the Senate analyzes it for a period similar to that taken in the Chamber. Finally, upon approval of the Senators, the bill gets sent to the President who will ratify or veto it after the appropriate consideration period (ranging from 2 months to 6 months). If any amendments are made to the bill in the Chamber or Senate, it is returned to the other House where it had already been approved, for further analysis of the changes.

Presently, the Government's coalition is composed of the President's party, PSDB, and the following parties: PTB, PMDB (split support), PFL (slip support), PST and PDT. The opposition parties are: PT, PMDB (portion), PFL (portion), PPB, PSB and PCdoB. The neutral parties are: PPS, PL, and PSL. It should be noted that party names have little meaning when it comes to designing their mandates and policies. Historically, Brazil's political parties have undergone countless changes in names, compositions, and party mandates. It is commonly known that the names of the parties should not be used as an indicator of how they may campaign on specific issues.

Appendix B: Proposal for a Tax Bill Promoting R&D

To: Mr. Ronaldo Sadenberg, Minister, Ministry of Science and Technology
From: Mr. Saulo Nogueira, Strategic Planner, Embraer
Re: A Proposal for a Tax bill Promoting R&D
Date: April 26th, 2002

Dear Mr. Sadenberg,

I am interested in sharing with you a tax bill proposal for research and development that will act as a catalyst for businesses to innovate and improve their competitiveness. So far, the Brazilian government has failed to implement fiscal policies encouraging R&D investment in the private sector. As you well know, R&D is imperative for the development of new technologies and products that are more attractive in the marketplace, whether domestically or internationally. Brazil is being left behind because of the government's dormant stance on promoting R&D. Therefore, I have a proposal for a tax bill that will promote R&D in all sectors of Brazil, especially the transportation industry that will receive higher incentives.

The R&D tax bill should afford companies investing in R&D the following:

- Income tax credit for the following levels:
 - Transportation sector: 50 %
 - All other sectors: 15%

The applicants must first meet the following criteria to receive the tax credit:

- Industrialization of its outputs to at least a minimum procedure standard called "Processo Produtivo Básico" (PPB);
- Invested at least 5% of its revenues in R&D, with 2% going towards joint programs with universities or research institutes;
- Obtained ISO 9000 certification for its products.

The reason for a higher tax credit level for the transportation industry is that this is an industry that has long been struggling to reduce its operation costs. Indeed, the government has recognized that the continued use of almost obsolete technologies in this industry is the reason for the high transportation costs in Brazil. The industry is in serious need of an overhaul in terms of production and operation efficiency, as well as technology usage. The whole economy would benefit from lower transportation costs in its commercial transactions.

I hope you give this due consideration, and I will contact you soon to provide any further information you may require.

Sincerely,

Saulo Nogueira
Strategic Planner - Embraer

Appendix C: Survey on Companies' R&D Investment Expectations

Please fill out as many answers as possible from this questionnaire. After completing the form, please put into the enclosed self-stamped envelope and put in the mail.

1. Industry your company belongs to:.....:
2. What is your company's annual revenues:_____.
3. How many employees are there at your company:_____.
4. What kind of research and development (R&D) activities is your company currently engaged in: _____.
5. What portion of your revenues is spent on R&D activities: _____.
6. Would your company support a R&D tax bill that gives tax credits for investments in R&D, if the investments meet the following criteria:
 - at least 5% of the company's revenues must go to R&D
 - At least 2% of the R&D investments must be applied with joint-public research institutionsYes [] No [] Maybe [] (please check appropriate box)
7. If you answered Yes to Q.6, how much more would your company invest in R&D per year, if the bill were in place:_____.
8. How would you rank the role of R&D in creating a competitive advantage for your company: _____ (1 to 10, where 10 is the highest ranking)

- Thank You -

Annex D: Media Advisory

MEDIA ADVISORY
1st December, 2001

Contact: Mr. Saulo Nogueira
Tel. (11) 682-5518

Introduction of Technological Innovation Bill in Congress

WHAT: Reception and a Press Conference to announce the date of introduction of bill in Congress, and to reveal surprising economic estimates of benefits expected its implementation.

WHERE: Trade Show Center, Room 101, Av. Tancredo 450, São Paulo.

WHEN: 8th of December, 2001. Reception at 12pm, Press conference at 12:30pm.

SPEAKERS: Mr. Carlos Moreira Ferreira, President of the CNI
Dr. Roberto Rimarães, Senior Advisor- Ministry of Science and Technology
Mr. Saulo Nogueira, Strategic Planner- Embraer
Mrs. Carla Mineira, Actress
Mr. Oscar Lorenzo Fernandez, Secretary of Industrial Technology- Ministry of Development, Industry and Commerce

WHY: Experts in the field of technology development and innovation will explain the need for an R&D tax bill to encourage businesses to invest in this field. Economic studies revealing the economic benefits from similar tax bill in other countries will be presented, as well as the latest research of long-term economic revenue growth resulting from increased R&D spending.

Also, “The Clone” soap-opera actress Mrs. Carla Mineira will reveal how the bill relates to upcoming episodes of the tele-novela. Mrs. Mineira will tell about how the bill will affect the future of her husband’s company.

Appendix E: Acronyms

Proex	Financing Program for Brazilian Exports
BNDES	National Bank for Economic and Social Development
CIRR	Common Interest Reference Rate
IPI	Industrial Production Tax
ICMS	Circulation Tax
MDIC	Ministry of Industry, Development and Commerce
CAMEX	Chamber of Foreign Trade
SECEX	Secretariat for Foreign Trade
Itamaraty	Ministry of Foreign Relations
DSB	Dispute Settlement Body
CNI	National Confederation of Industries
SEPIN	Secretariat of Information Policy
PSBD	Brazilian Socialist Democratic Party
PFL	Liberal Front Party
PMDB	Brazilian Democratic Movement Party
PT	Labor Party
PST-PDT	Social Workers' Party – Democratic workers' Party
PTB	Workers Party of Brazil
PPB	Brazilian Progressive Party
PSB - PCdoB	Brazilian Socialist Party- Communist Party of Brazil
PPS	Popular Socialist Party
PL - PSL	Liberal Party - Social Liberal Party

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Author's Note

Since the original writing of this project, the two companies have progressed only slightly. Although the WTO Dispute Settlement Body ruled in August 2001 that Proex III was in line international financing conditions, the Canadians made a final appeal to the panel. The panel did not change its ruling. Although the Brazilian government was granted permission to apply retaliatory tariffs on Canadian products, it chose not to. In December 2002, the DSB gave the final ruling marking the end of all proceedings of the dispute in the WTO. However, the actual status of the dispute remained unresolved because both sides continued to view each other's operations as being unfair and illegal. The Canadian prime-minister visited Brazil in December 2004 and agreed with Brazilian president Lula da Silva to put an end to the dispute and work towards strengthening the commercial ties between the two countries. It remains to be seen whether or not this diplomatic rhetoric will turn into a reality. Recent declarations from the Ministry of Foreign Affairs of both countries points to a possible free trade agreement between Mercosur (of which Brazil is a member) and Canada, which may possibly require a formal agreement to finally put the dispute to rest.