STRUCTURE OF BRAZILIAN INTERSTATE COMMERCE: AN INPUT-OUTPUT APPROACH*

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ABSTRACT

The main objective of this paper is to provide the trade integration degree between regions and States of Brazil. For this purpose, the method of extraction suggested by Dietzenbach (1993) was be used, it was done hypothetical extractions of each political unit of the Federation. This method gives safe statistics of purchases and sales made between States and regions, attempting to measure their trade integration degree. The study was done for 1996 and 2002, it was used matrices containing interregional input and output for these years. Such matrices represent a diagnosis of business relationships between the 27 units of the Federation in this period, divided into eight sectors. The results show the economic activity concentration at southeast and south of Brazil, as a consequence of unilateral trade relationships. The State of São Paulo is once again presented with emphasis on internal marketing.

KEY-WORD: Input-Output, Extraction Method, Macroeconomic Accounting.

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1. INTRODUCTION

The analysis of the flow of goods and production factors between regions can bring light to the understanding of the inequalities existing between them, as well as their determinants and implications. It is known that trade can bring benefits to the parties involved, the cause for which countries seek to market between them. According to Schwartzman (1975), this flow takes place much more freely between regions of the same country than between countries, since there is more mobility of factors in the former than in the latter, since in international commerce the imposition of limits and barriers to the flow of goods and factors is easier. The author alleges that very often the characteristics of this movement of capital, persons and goods can infer the development or the stagnation of certain regions.

From this point, the analysis of the characteristics of inter-regional trade can be of great importance for studies focused on regional development. Within these studies it is possible to detach three important authors who contributed significantly to a better understanding of the development and inequality existing between regions (countries): North, Myrdal and Perroux.

Douglas North (1977) created a theory that was called “Export Base Theory”. Its central point is the supposition that exports drive regional growth through the multiplying effect that they produce directly or indirectly on other local activities not connected with the export. This being so, exporting constitutes a necessary, though not sufficient, condition for regional development.

Another study much relevant is of Myrdal (1957), who says that there is a tendency of aggravation of regional disparities, since market forces make certain regions concentrate on activities that produce returns above the average. This is the principal idea of the so-called "Circular Causation Theory", according to which this tendency of concentration might be begun due to initial conditions or advantages (like natural resources) which would privilege a given region to the detriment of others, which would not manage to be sufficiently attractive for new activities. According to Myrdal (1957), two distinct processes exist in inter-regional relations. The first one consists of the "spread effects", which are the principal stimuli for the progress of less developed regions, since the richest regions import resources and invest in certain sectors of the poorest ones. The second one summarizes the "backwash effects", which produce polarization, acting in the opposite sense of the first process.

Another very important theory of regional studies is the "Theory of Polarization", of Perroux (1977), according to which growth does not appear naturally at all places, but only at certain points (or poles). These poles can be considered as a set of units influenced by an important activity, which has an effect on the region and acts like a type of "driving unit" in the middle, through a chain of beneficial effects.

It is relevant to notice which changes in external environments have direct and indirect impacts that show themselves in unequal form on nearby regions, be they near or distant. From the three theories quoted above, and including many others that address the question of regional development, the great importance of trade is realized. From this importance, the present paper proposes to present a structural view of the commercial relations between Brazilian States and regions, highlighting the relevance of these relations for each one of them.

Besides this introductory section, the paper is subdivided into four others. In Section 2 works which address the subject of inter-regional marketing in Brazil are introduced and discussed. In Section 3 the methodology used for the measurement of the commerce between regions is presented. The fourth section presents the discussion of the results obtained in the work. In the fifth section are the final conclusions of the paper.

2. INTER-REGIONAL COMMERCE IN BRAZIL

Brazil presents a notable heterogeneity as concerns production and trade. There are States, like those of the South-east Region, which have great volume of production and importance in interstate commerce, creating great influence on the production of other States.

The discussion on the development of internal commerce in Brazil has been present in studies on the Brazilian economy for a long time, even when one speaks of historical studies, as in the discussion between Martins (1982) and Slenes (1985), who present studies for Minas Gerais in the 19th century discussing the economic energy and internal and external marketing with other provinces.

Martins (1982) was one of the pioneers in challenging the idea of an economic modulation suffered by Minas Gerais in the 19th century with the decline of mining, explaining that the absence of inquiry was what allowed this false belief. He presents Minas Gerais as an economy that did not have its bases devoted to the foreign market, being constituted of agricultural units that were producing for their own consumption, with the sale of surpluses to local markets. For the period in study, Minas was a great importer of slaves, which conflicts with any idea that this economy had lost energy with the weakening of mining activity. Slenes (1985), in another interpretative model, believes in the underestimate of the importance of the exporting sector that, in his vision, was the source of tax revenue and explained the capacity to import slaves. He suggests that the mining regions that lost slaves were associated with the weakening of the relation with the export economy and, so, that the slave was part of the economic complex of the plantation. The dynamic of the foreign market stimulated a larger internal dynamic, creating strong demand inside the province and lifting up the participation of slave labor in the economic activities that were subsidizing the principal axle of the mining economy: the export sector. Paiva (1996) presents another model for interpretation of the mining economy of the 19th century. His paper presents Minas Gerais as a vast territory characterized by great regional diversity, in such a way that analysis referring to this province cannot be done in the generalized way, as if there was some type of homogeneity to be defined. Thus, Minas can not be defined as if it had an economy based on a primary exporting model, nor as having its economic activity turned exclusively to internal subsistence. The regions with more commercial links with the outside were formed of developed urban networks and a relevant number of inhabitants in the cities. There were, also, regions that were not producing for marketing in foreign markets, which were producing very little, or which were weakly integrated into the export sector.

Beyond this discussion on the mining economy in the provincial period, other authors, in studies for more recent periods, have been discussing the development and importance of internal (interState) marketing in Brazil, such as: Galvão (1993), Pacheco (1998), Castro *et al* (1999), Domingues *et al* (2002), Perobeli *et al* (2006), Vasconcellos and Oliveira (2006), Magalhães and Domingues (2007), Almeida and Silva (2007), among others.

Galvão (1993) presents a study of inter and intra-regional trade for the period from 1941 to 1969. In his paper it is shown that in the decade of the 1940s and beginning of the decade of the 1950s, the marketing between regions and States was still incipient, most of the interstate marketing being done inside the same region. For this same period, international trade was surpassing the inter-regional. One of the justifications presented for this low development of commercial relations between States and regions in Brazil was the weak development of transportation networks. From the decade of the 1960s inter-regional trade begins to gain importance, with significant reduction in the participation of foreign relationships. Another important observation of the work of Galvão (1993) is the direct relation between commercial integration and regional development. Such a relation had already been realized in the study of Paiva (1996) for Minas Gerais, and is amply justified in the theory of the "export base" of Douglas North (1977).

Pacheco (1998) presents the results from interstate commerce in a study of another period. Between 1975 and 1985 the commercial inter-regional relations present a significant decrease or stagnation. Two States were significant in this period, Bahia and Amazonas, because of having presented results which turned out to be different from the rest. The first one had its commercial intercourse with other regions driven by the installation of the chemical industry in the State and the latter by the installation of the Free-trade area of Manaus.

Castro *et al* (1999) in a study using a gravitational model, discusses the dimensions of Brazilian interstate commerce at 1985, with distinction for the importance of the transport costs involved in such transactions. For the author there is strong space concentration in the distribution of Brazilian commerce with flows of exports and imports centralized in a few States – basically in two macro-regions, South-east and South. A comparison between São Paulo and all the federal units of the North, Northeast and Middle West, with the first concentrating 32 % of interstate exports and the rest, joined together, totaling only 22.5 % of the total of these exports. These results expose a strong economic dependence of some Brazilian States, manifest in a unilateral way, which produces problems in the balance of trade of several States. Only São Paulo, Rio of January, Minas Gerais, Paraná, Amazonia and Saint Catarina presented surpluses in the year analyzed, being responsible for around 70 % of the exports and 58 % of the imports.

Domingues *et al* (2002), also on basis of a gravitational model, examine changes in the structure of inter-regional Brazilian commerce, using data for 1985 and 1997.
In this work, the authors demonstrate that, besides space determinants, the State GNP is a basic factor in what concerns interstate commerce. In this sense, distance has an important role in bilateral trade, with neighbors presenting larger commercial relations, the same thing being true for States pertaining to the same region.

Perobelli *et al* (2006), in a spatial analysis, verified patterns of interstate commerce and the degree of integration of the national market, using the same data base of Domingues *et al* (2002) for 1985 and 1997. Among the conclusions of the paper was that, in spite of the commercial relations between the States having intensified in the period analyzed, regions with elevated level of commercialization have a tendency to concentrate in space. The presence was noted of a cluster formed by regions of high trade located in the South-centre portion of the country, in counterpart to the North of the country that concentrates States presenting commercial relations at levels below the national average. The study permitted verification that there was no alteration in the pattern of concentration of commerce in the country from 1985 to 1997, with the permanence of spatial heterogeneity.

Vasconcellos and Oliveira (2006) did a descriptive analysis of the list of exports (for other States) by economical activity. The study was done for all the Brazilian States in the year of 1999. Among the principal results found was that the State of São Paulo is responsible for most of the purchases effectuated by other States of the country and presents a high concentration of exports in just a few activities. Considering the Southern region, it highlights the reasonable deconcentration of the list of exports of the three States, with the exclusion of São Paulo. The Middle West is marked by great centralization of exports to São Paulo, Paraná and Minas Gerais. The operations of goods exiting from other States reveal strong concentration in the activities of manufacture of foodstuffs and drinks and farming. The analysis for the Northeast indicates the great predominance of intra-regional commerce, with distance presenting a great impediment to commerce. For the North, the State of Amazonia stands out from the rest for the significant volume of export to São Paulo and Rio de Janeiro, with this distinction due to the Free-trade area of Manaus. The principal destination for products from this region is in the South-east of the country, with flow of, essentially, eletroeletronic products, foodstuffs and drink, and wood.

Magalhães and Domingues (2007) show that the process of regional integration of the country in spite of stretching out during the whole 20th century, has been more vigorous since the second world war, with distinction for the mobilization of investments in areas of infrastructure and for the enlargement of the road network. In this new scenario the inter-regional flows of commerce present significant elevation. Of this observation it is noticed that the relative isolation of the region, with its activities turned fundamentally to export (international market), betrayed the fragility of the home market in the period before the 1950s. In this work, the authors attract attention to the importance of knowing inter-regional interactions as the essential tool for evaluation of the effects of interstate commerce on the economic development of regions.

Almeida and Silva (2007) measure how much geographical proximity influences the commercial relations inside the country (border effect). Of the results found we can point out that intra-State trade is very superior to interstate or international commerce (it was found that it can be 32 and 96 times larger, respectively). The border effect calculated for each State indicated greater commercial integration between the States of the South-east and Southern region of Brazil, besides little integration between the Brazilian States, as a whole, and little integration with international commerce.

All these studies presented highlight the importance of knowing the degree of interaction between States and regions of the country, since the development of these relations, with a larger regional integration, can be seen as fundamental for increased development of the country, with the reduction of regional disparities, since these relations manifest themselves in the bidirectional form.

3. METHODOLOGY AND DATA BASE

3.1 DATA BASE

The data base used in this paper is composed of existing inter-regional matrices of input and output for Brazil, referring to the years of 1996 and 2002. These matrices were constructed by FIPE (Foundation Institute for Economic Researchs) and relations of flows are divided into 27 units of the Federation (UF), with eight productive sectors for each unit, in a total of 216X216.

3.2 METHOD

The methodology employed in this work, which seeks to measure the importance of inter-regional interaction in Brazil, is based on the method of hypothetical extraction of one unit of the Federation with the objective of capturing the effect that extraction practices on other States. It is desirable to determine not only the importance of interstate commerce, but also the imbalances observed in each federal unit (UF) as a result of the hypothetical break of commercial links between such units.

Miller (2001) compares several possible forms of working with extraction, and determines that there are no great differences in the forms with which the method is applied, with similar results produced in many cases. Since the application of the methods of extraction produces satisfactory results in the study of forward and backward linkages, Dietzenbacher (1993 and 1997) notes that the use of the approach proposed by Ghosh (1958), to the detriment of the approach proposed by Leontief (1936 and 1986), produces better results in the analysis of the effects of forward linkages. The approach of Leontief is widely recognized and well accepted, with the idea of fixed coefficients for use of the inputs, which is supported in the microeconomic definition of constant returns of scale. The proposal of Ghosh, however, is based on the supposition that the products are sold to the sectors in fixed proportions. This proposal was not well accepted, because of lacking a good theoretical backing to justify economically the phenomenon of sales in fixed proportions, not even in attempting its use for a planned economy like the Ex-USSR (Mesnard, L. 2007). In spite of this limitation, Dietzenbacher (1993) points out that the use of the approach proposed by Ghosh produces better results than forward linkages.

For a general case of an inter-regional input-output model with N regions and n sectors in each of N regions, we have the following structure partitioned from the inter-regional matrix of technical coefficients:

$$A = \begin{bmatrix} A^{11} & A^{1R} \\ A^{R1} & A^{RR} \end{bmatrix}, \qquad (1)$$

with R representing the other 26 units of the federation. A^{11} represents an 8x8 matrix, with all the inter-sectoral relations of the State selected, A^{1R} is 8x208, A^{R1} is 208x8 and A^{RR} is 208x208.

3.2.1 BACKWARD LINKAGES:

As already discussed, in the analysis of backward effects, the approach proposed by Leontief (1936) will be used. The model is given by:

$$x = Ax + y \qquad (2)$$

with: x –vector product with nN-elements;

A - nNxnN matrix of technical coefficient inputs;

y - is the vector of final demand with nN-elements.

Algebraically, this model has the following solution:

$$x = (I - A)^{-1} y, \qquad (3)$$

with $(I - A)^{-1}$ representing the Leontief inverse. So, the inverse Leontief of the partitioned matrix A can be represented as:

$$L = (I - A)^{-1} = \begin{bmatrix} L^{11} & L^{1R} \\ L^{R1} & L^{RR} \end{bmatrix} = \begin{bmatrix} H & HA^{1R}\alpha^{RR} \\ \alpha^{RR}A^{R1}H & \alpha^{RR}(I + A^{R1}HA^{1R}\alpha^{RR}) \end{bmatrix}, \tag{4}$$

with $H = (I - A^{11} - A^{1R}\alpha^{RR}A^{R1})^{-1}$ and $\alpha^{RR} = (I - A^{RR})^{-1}$.

Among several means of extraction presented in Miller (2001), it was decided to do the extraction of only the commercial link between the unit of the Federation and other States, present in Cella (1984). From this option, our matrix of technical coefficients is defined as:

$$A = \begin{bmatrix} A^{11} & 0 \\ 0 & A^{RR} \end{bmatrix}, \tag{5}$$

which represents the total breakage of commercial relations of the hypothetical unit of the Federation with other States. In this case, assuming that $A^{1R} = 0$ and $A^{R1} = 0$, due to the extraction option, we have our new inverse Leontief matrix:

$$L = (I - A)^{-1} = \begin{bmatrix} L^{11} & 0 \\ 0 & L^{RR} \end{bmatrix} = \begin{bmatrix} (I - A^{11})^{-1} & 0 \\ 0 & (I - A^{RR})^{-1} \end{bmatrix}, \tag{6}$$

From equation (2), we have:

$$x = \begin{bmatrix} x^1 \\ x^R \end{bmatrix} = \begin{bmatrix} L^{11} & L^{1R} \\ L^{R1} & L^{RR} \end{bmatrix} \begin{bmatrix} y^1 \\ y^R \end{bmatrix} \tag{7}$$

With the hypothetical breakage of commercial relations of the region (1) with the rest, we reach the following results:

$$\bar{x}^1 = (I - A^{11})^{-1} f^1 \tag{8}$$

$$\bar{x}^R = (I - A^{RR})^{-1} f^R \tag{9}$$

Using the approach proposed by Leontief, we are interested in knowing what the effects of backward linking are that the hypothetical federation unit is able to cause in the remainder of the economy, when it is extracted. This linking measure is given by the difference between the product of the remainder of the economy as a whole (x^R) less the product of the economy after the hypothetical extraction $(\overline{x}^R)$. This difference can be understood as a measure of the importance of the hypothetical arrived region seen from the rest of the country. The measure of backward linking of the hypothetical region would be:

$$x^R - \overline{x}^R = L^{R1} f^1 + L^{RR} f^R - (I - A^{RR})^{-1} f^R \tag{10a}$$

$$= (I - A^{RR})^{-1} A^{R1} L^{11} [f^1 + A^{1R} (I - A^{RR})^{-1} f^R] \tag{10b}$$

The interpretation of this result gives us how much importance the rest of the economy places on the hypothetical region in 1, and is a measure of backward linking.

3.2.2 FORWARD LINKAGES:

The measure of forward linking will be done by the instrument of analysis proposed by Ghosh (1958). In this case we have the model given as:

$$x' = x' B + v' \tag{11}$$

with: x' – vector product

B – matrix of technical coefficients, according to Ghosh (1958). $B = \hat{x}^{-1} T$, remembering that $A = T \hat{x}^{-1}$ is the matrix of technical coefficients proposed by Leontief (1936).

v' - vector of added value.

From equation (11) we have:

$$x' = v'(I - B)^{-1} = v'G \qquad (12)$$

This equation is the dual form of equation (3) for a model directed to supply. As in backward linkages as well, the effects of linking can be obtained on the basis of the vector $(x - \bar{x})'$. When extracting region 1 hypothetically, we have:

$$(x - \bar{x})' = \left[(x^1 - \bar{x}^1), (x^R - \bar{x}^R) \right]$$

$$= (v^{1\prime} - v^{R\prime}) \left\{ \begin{bmatrix} G^{11} & G^{1R} \\ G^{R1} & G^{RR} \end{bmatrix} - \begin{bmatrix} (I - B^{11})^{-1} & 0 \\ 0 & (I - B^{RR})^{-1} \end{bmatrix} \right\} \qquad (13)$$

So, the vector $(x^R - \bar{x}^R)'$ represents the effects of forward linking of the hypothetical region extracted on the remainder of the economy, and the vector $(x^1 - \bar{x}^1)'$ represents the forward effects of the rest of the economy on region 1.

4. ANALYSIS OF THE RESULTS

Through the method of extraction it is possible to analyze the existing inter-regional dependences and to capture the economic relevance of the Federation Units, some results about the internal commercial structure of the country being thus obtained. The results are based on the supposition of a total commercial break between each Unit of the Federation, done separately, with the rest of the country. This methodology allows measuring the effects on GNP and on imports and inter-regional exports resulting from this commercial break of the country with this hypothetical UF.

Since the work is done for two years and there are 27 Units of the Federation of Brazil, it becomes impossible to present and discuss all the results obtained for each UF*. For the presentation and discussion of the results a UF will be chosen for each Brazilian macro-region, and the criterion is related to its economical relevance. In order to avoid any type of subjectivity, such a choice will be done regarding the participation of the GNP of this UF in his macro-region.

Taking the macroeconomic identity below as base, which was separated to represent the interstate commerce relations (import and export):

$$Y_i = C_i + I_i + G_i + X_i - M_i + X_i^* - M_i^* \tag{14}$$

with:

$Y_i =$ income or output in the region (State) i;

$C_i =$ consumption in the region (State) i;

$I_i =$ investment in the region (State) i;

$G_i =$ expenses of the government in the region (State) i;

$X_i =$ exports of i to other regions (States);

$M_i =$ imports of i from other regions (States);

$X_i^* =$ exports of i to outside of the country;

$M_i^* =$ imports of i coming from outside from the country;

It can be seen that the result of inter-regional commerce, for each Unit of the Federation, must be seen as analogous to international commerce in the context of the country.

* All tables with the results obtained in the work are found annexed to the text

The first State to be analyzed is São Paulo. Its importance for Brazil is defended widely by several empirical works that analyze internal commerce in the country, as it was demonstrated in the beginning of this work. It is worth pointing out that its importance is so significant that the effect of the "extraction" of each State was measured in the State of São Paulo. These effects also are measured in terms of macro-regions and for Brazil as a whole, as it is possible to observe in Table 39 and Table 40.

[Table 39]

[Table 40]

A commercial break from the rest of Brazil with any State which is being analyzed provokes an alteration in the internal relations and import and export that re-balances with the alteration of the product (Y), once the exogenous components C+I+G+X*-M* are obtained. This re-balance is observed in the table above in the lines referring to "Extraction".

As can be seen in the tables, the results for São Paulo present the peculiarity of provoking an effect of increase of output in practically all regions (South-east is an exception, because it loses output with the "isolation" of this State). This output increasing caused by the end of commercialization with São Paulo can be understood as indicative of the existence of a unilateral trade between such regions and São Paulo, which benefits it to the detriment of the internal development of other States. The data suggest that there is a tendency to have an increase in GNP, including for Brazil seen as a whole, with the exception of São Paulo. It can be noticed also that, for these two years, São Paulo reduces its output in function of this hypothetical commercial isolation.

Regarding the output of the South-east, a curiosity can be seen in its increase in 1996 and its reduction in 2002, given this "isolation" of São Paulo. It is suggested here, that the explanation for this different output of the region is connected with the intensity of interstate commercial relations in 1996, which was quite superior to what was observed in 2002. In 1996, these relations, and in consequence its unilateral benefit demonstrated to the State of São Paulo, probably made its breakage produce a better situation for the whole region. Since in 2002 the numbers for interstate trade in this region are much more modest, its breakage produces a negative effect to any region. A hypothesis for the weakening of commercial interstate relations in 2002 compared with 1996 is a preference for commercial practices other countries, which can be observed in all the tables of this work. In absolute values, only the South-east reduces its commercial internal relations, but in relative values this reduction is observed for all the macro-regions of the country. There could be two explanations for this international trade increase in 2002: exchange effect (whereas in 1996 there was almost equality of the Real with the Dollar, in 2002 the national currency was devaluated compared to the American currency, which strongly altered international commercial relations and, consequently, the relations between Brazilian States) and an effect of adjusting national production to compete with the outside (with the commercial opening of Brazil, in the 1990 years, the necessity was seen of adapting national production to compete abroad, so that in 1996 the country was understood to still lack conditions to compete fully).

It is worth noticing that the result Y for the SE region after the "Extraction" of SP refers to the sum of the output of Minas Gerais, Rio de Janeiro, Espírito Santo, which keep on marketing between themselves, and Y of the State of São Paulo, but isolated from commercial relations with the remainder of Brazil. The same thing is valid for all the other charts, in which the "extracted" State must be thought as composing the output of the region, but in the isolated form.

Table 17 and Table 18 show the effects on the macro-regions, on the Brazilian economy and on the State of São Paulo, when a break takes place of commercial relations between Bahia and the rest of Brazil (values detached in the chart):

[Table 17]

[Table 18]

When one compares the results obtained by the method with the macroeconomic equilibrium $\left(Y = C + I + G + \left(X - M\right) + \left(X^* - M^*\right)\right)$ of each region, significant alterations are noticed. This is valid for the 27 units of the federation and for the two years in which they are studied.

In 1996, supposing that the State of Bahia stops trading with the rest of Brazil, its output falls more than R$ 10 billion, which shows the importance of the Bahian market for the Brazilian economy. Such an alteration does not appear so incisive at 2002, in spite of also producing a negative effect on country output. With the hypothesis of commercial flow change, which would transfer interstate commerce to international, the increased possibility of foreign export in 2002 eases the impact of the break of the commercial relations with Bahia. This option for foreign commerce can be observed in all tables of this paper.

At 1996, with the exception of Northeast, all the other regions present fall in as a result of the commercial breakage with Bahia. The results for 2002 show less homogeneity in the behavior. Only the South-east would lose output with the end of commercial relations with Bahia. The significant increase of South output, for this year, suggests the existence of some commercial relation between these two regions that has been undergoing structural alterations in this period of time. It is more simple to understand structural alterations in the trade between two regions (and / or States) when these have more geographical proximity than when a significant distance exists between them, as in the case of Bahia with the South.

Table 45 and Table 46 show the results for the State of Rio Grande do Sul:

[Table 45]

[Table 46]

It is noticeable that in 1996, since Rio Grande do Sul is the great importer of the South-east region, with the suspension of the commercial flows this region suffers loss in its output, an effect still more accented in 2002. This effect results principally for the trade with São Paulo, whose variation in production in the two periods represents almost the total variation of the region. Middle West, Northeast and North experience an increase in output in 1996, with the "extraction" of this State, indicating the existence of commercial flows that would favor Rio Grande do Sul to the detriment of others, as was already said. However, North and Northeast present different structure in 2002, suffering loss of production when the commerce with the State ceases.

Observing the results for Brazil, it is possible to point out that the country, as a whole, has, with time, become more dependent and more sensitive to alterations in commercial relations with the State. Only the production of the Middle West shows signs of improvement with the commercial blockade.

Results for the State of Amazonia an be seen in Table 5 and Table 6.

[Table 5]

[Table 6]

A great part of the commercial importance of the Amazon region is due to the Free-trade area of Manaus, created in 1967, by the Brazilian government, with the objective of stimulating the industrialization of the capital of the State and of nearby regions. Driven by it, the State has a significant commercial importance in the whole country. A good part of its commerce is carried out with the South-east, this being the principal destiny of its products and its principal supplier of raw material and other imported goods. Given commercial importance of this State for the South-east region, it is obvious in the two years analyzed that the output of this region declined in function of the “commercial breakage”. The impact is more expressive in the year 1996, for motives already presented, related to the loss of relative importance in the internal commercial relations.

There a direct relation observed of the increase of output in the NE and CO regions which were presenting negative commercial balances with the Amazon, just as the N, for two years. The justification here is similar to the one that was given for the case of São Paulo, relative to a cessation of the trade that appears beneficial to one region to the detriment of another. The reduction in the output with the "isolation" of the Amazon also is a reflex of its commercial importance for the whole country.

The effect observed in São Paulo is different for two years. In 1996, the commercial breakage does not favor the Amazon, producing significant reduction in its output. The opposite takes place in 2002, with an increase of output as a result of the interruption of these commercial relations. The explanation for this is the alteration in the commercial structure between the States, which changes from extremely unequal and beneficial to São Paulo, to a little more balanced.

The results referring to a hypothetical commercial breakage of the State of Goiás with the rest of the country can be observed in Table 49 and Table 50.

[Table 49]

[Table 50]

It is important to point out that, in spite of the State of Goiás having the second largest GNP of the Central West region, the exhibition of its results was chosen instead of that of the Federal District (with bigger GNP), since a great deal of the income observed in the latter has been due to the fact of being the headquarters of the Federal Government, and not to its productive or commercial importance.

The existence of commercial deficits of this State with the south-east and south regions, in the two years studied, points out that commercial breakage between this State and these regions would be damaging to them, with reduction in their respective output. Besides these decreases the probable existence of a larger inequality in the commercial transactions in the year of 2002 can be observed, since the negative effect of this hypothetical commercial breakage is much more distinct in this year, with significant fall in the output seen separately, including for São Paulo.

Another important point is the change of consequence of this commercial breakage between 1996 and 2002 for the Middle West, Northeast and Northern regions, which in 1996 would suffer a positive effect from this break of commercial relations and in which they would suffer a negative effect, with reduction of output. In this case, as well as of the Amazon, a modification of the structure of the commercial transactions between the periods is observed. In 2002, inclusive, the State of Goiás, since it causes a reduction in the output of other regions with the hypothetical breakage of its commercial relations with the rest, suggests that such a State appears deficient in trade with all the regions of the country, a reflection of the unilateral commercial structure that is addressed by some works presented in the beginning of this text.

5. FINAL CONSIDERATIONS

To study and to know in consolidated form the commercial relationships between States and regions is necessary to understanding the Brazilian economic dynamism. This paper shows the maintenance of regional disparities in Brazil, although it has shown decline in the period 1996 to 2002, rather than decrease the importance of internal trade. It shows also an absolute loss for the Southeast region, which is responsible for a large fraction of inter-regional trade relations.

The great importance of establishing a trade network between States and regions stands out, and of guaranteeing that such commercial relations should show in a positive form for the parts involved, unless there are imbalances. Such disparities have a tendency to produce adverse situations that distance more and more these regions and States and make them more and more dependent on one of the others in a unilateral way, with significant economic loss for one party.

The existence of solid trade relationships is also basic for development of a region, as it was pointed out by several authors who work with the regional question. However, as suggested previously, these foreign trade relationships are subject to other (external) restrictions that are outside the government power, causing incentive policies difficult. In this sense, stimulate development of internal commercial relationships is simpler, as in example the creation of the free-trade area of Manaus, that could guide regional productive structure, reducing regional disparities between it and the principal producing regions of Brazil in a significant way.

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Appendix: Tables of Results

Table 1: Results from the Extraction of Acre - 1996 (in R$ thousand)							
		Y	**C+I+G**	**X**	**M**	**X***	**M***
SE	Calibrated	398,331,415	380,790,414	308,570,857	281,144,275	22,275,645	32,161,227
	Extraction	397,965,758		308,182,950	281,122,025		
S	Calibrated	128,778,590	117,529,894	89,484,093	86,598,063	13,460,142	5,097,475
	Extraction	128,683,688		89,382,531	86,591,403		
CO	Calibrated	55,833,483	68,294,202	37,034,727	49,595,460	1,107,259	1,007,244
	Extraction	55,788,074		36,978,939	49,585,081		
NE	Calibrated	93,962,783	108,335,141	40,454,056	53,427,645	3,047,391	4,446,160
	Extraction	93,953,489		40,439,241	53,422,124		
N	Calibrated	33,442,580	41,367,808	11,731,295	16,509,585	1,244,382	4,391,320
	Extraction	33,441,713		11,729,726	16,508,883		
BR	Calibrated	710,348,852	716,317,459	487,275,027	487,275,027	41,134,818	47,103,426
	Extraction	709,832,723		486,713,423	487,229,551		
SP	Calibrated	237,299,180	222,787,455	208,261,347	187,592,574	15,968,679	22,125,726
	Extraction	237,051,108		208,008,171	187,587,470		

Source: Based on the model results.

Table 2: Results from the Extraction of Acre - 2002 (in R$ thousand)							
		Y	**C+I+G**	**X**	**M**	**X***	**M***
SE	Calibrated	1,190,018,421	1,097,843,991	206,830,879	156,929,885	117,183,348	74,909,911
	Extraction	1,189,265,171		205,993,849	156,846,106		
S	Calibrated	367,727,202	337,572,807	62,991,061	75,176,697	65,590,678	23,250,647
	Extraction	367,554,028		62,781,101	75,139,911		
CO	Calibrated	158,236,136	173,097,174	20,027,921	41,003,927	10,388,856	4,273,888
	Extraction	158,156,376		19,919,989	40,975,755		
NE	Calibrated	266,459,168	276,958,011	37,360,455	51,153,658	13,628,985	10,334,625
	Extraction	266,341,857		37,214,145	51,124,658		
N	Calibrated	92,630,498	94,662,706	17,365,512	20,311,662	9,486,355	8,572,414
	Extraction	92,572,738		17,291,453	20,295,362		
BR	Calibrated	2,075,071,426	1,980,134,688	344,575,829	344,575,829	216,278,223	121,341,485
	Extraction	2,073,890,181		343,200,644	344,381,888		
SP	Calibrated	720,762,956	664,078,365	117,843,459	85,253,100	76,877,141	52,782,909
	Extraction	720,265,581		117,294,020	85,201,036		

Source: Based on the model results.

Table 3: Results from the Extraction of Amapá - 1996 (in R$ thousand)							
		Y	**C+I+G**	**X**	**M**	**X***	**M***
SE	Calibrated	398,331,415	380,790,414	308,570,857	281,144,275	22,275,645	32,161,227
	Extraction	398,130,808		308,365,536	281,139,561		
S	Calibrated	128,778,590	117,529,894	89,484,093	86,598,063	13,460,142	5,097,475
	Extraction	128,726,068		89,426,278	86,592,770		
CO	Calibrated	55,833,483	68,294,202	37,034,727	49,595,460	1,107,259	1,007,244
	Extraction	55,822,791		37,023,501	49,594,926		
NE	Calibrated	93,962,783	108,335,141	40,454,056	53,427,645	3,047,391	4,446,160
	Extraction	93,942,605		40,430,558	53,424,325		
N	Calibrated	33,442,580	41,367,808	11,731,295	16,509,585	1,244,382	4,391,320
	Extraction	33,442,005		11,730,489	16,509,354		
BR	Calibrated	710,348,852	716,317,459	487,275,027	487,275,027	41,134,818	47,103,426
	Extraction	710,064,277		486,976,366	487,260,940		
SP	Calibrated	237,299,180	222,787,455	208,261,347	187,592,574	15,968,679	22,125,726
	Extraction	237,152,071		208,110,925	187,589,262		

Source: Based on the model results.

Table 4: Results from the Extraction of Amapá - 2002 (in R$ thousand)							
		Y	**C+I+G**	**X**	**M**	**X***	**M***
SE	Calibrated	1,190,018,421	1,097,843,991	206,830,879	156,929,885	117,183,348	74,909,911
	Extraction	1,189,192,238		205,899,012	156,824,202		
S	Calibrated	367,727,202	337,572,807	62,991,061	75,176,697	65,590,678	23,250,647
	Extraction	367,504,612		62,719,460	75,127,686		
CO	Calibrated	158,236,136	173,097,174	20,027,921	41,003,927	10,388,856	4,273,888
	Extraction	158,205,639		19,952,293	40,958,797		
NE	Calibrated	266,459,168	276,958,011	37,360,455	51,153,658	13,628,985	10,334,625
	Extraction	266,327,784		37,201,588	51,126,174		
N	Calibrated	92,630,498	94,662,706	17,365,512	20,311,662	9,486,355	8,572,414
	Extraction	92,587,564		17,304,581	20,293,664		
BR	Calibrated	2,075,071,426	1,980,134,688	344,575,829	344,575,829	216,278,223	121,341,485
	Extraction	2,073,817,870		343,077,102	344,330,658		
SP	Calibrated	720,762,956	664,078,365	117,843,459	85,253,100	76,877,141	52,782,909
	Extraction	720,225,601		117,234,250	85,181,246		

Source: Based on the model results.

Table 5: Results from the Extraction of Amazonas - 1996 (in R$ thousand)							
		Y	**C+I+G**	**X**	**M**	**X***	**M***
SE	Calibrated	398,331,415	380,790,414	308,570,857	281,144,275	22,275,645	32,161,227
	Extraction	395,884,894		305,017,640	280,037,579		
S	Calibrated	128,778,590	117,529,894	89,484,093	86,598,063	13,460,142	5,097,475
	Extraction	128,544,097		89,095,865	86,444,329		
CO	Calibrated	55,833,483	68,294,202	37,034,727	49,595,460	1,107,259	1,007,244
	Extraction	55,901,721		36,873,396	49,365,891		
NE	Calibrated	93,962,783	108,335,141	40,454,056	53,427,645	3,047,391	4,446,160
	Extraction	94,194,279		40,280,600	53,022,694		
N	Calibrated	33,442,580	41,367,808	11,731,295	16,509,585	1,244,382	4,391,320
	Extraction	33,468,933		11,719,997	16,471,933		
BR	Calibrated	710,348,852	716,317,459	487,275,027	487,275,027	41,134,818	47,103,426
	Extraction	707,994,587		482,996,338	485,350,603		
SP	Calibrated	237,299,180	222,787,455	208,261,347	187,592,574	15,968,679	22,125,726
	Extraction	235,063,136		205,020,422	186,587,694		

Source: Based on the model results.

Table 6: Results from the Extraction of Amazonas - 2002 (in R$ thousand)							
		Y	**C+I+G**	**X**	**M**	**X***	**M***
SE	Calibrated	1,190,018,421	1,097,843,991	206,830,879	156,929,885	117,183,348	74,909,911
	Extraction	1,189,836,323		197,224,372	147,505,476		
S	Calibrated	367,727,202	337,572,807	62,991,061	75,176,697	65,590,678	23,250,647
	Extraction	367,288,749		60,805,571	73,429,660		
CO	Calibrated	158,236,136	173,097,174	20,027,921	41,003,927	10,388,856	4,273,888
	Extraction	158,543,459		19,107,506	39,776,189		
NE	Calibrated	266,459,168	276,958,011	37,360,455	51,153,658	13,628,985	10,334,625
	Extraction	266,459,335		35,968,569	49,761,605		
N	Calibrated	92,630,498	94,662,706	17,365,512	20,311,662	9,486,355	8,572,414
	Extraction	92,670,690		16,795,830	19,701,786		
BR	Calibrated	2,075,071,426	1,980,134,688	344,575,829	344,575,829	216,278,223	121,341,485
	Extraction	2,074,839,179		330,028,366	330,260,613		
SP	Calibrated	720,762,956	664,078,365	117,843,459	85,253,100	76,877,141	52,782,909
	Extraction	721,222,801		110,972,338	77,922,134		

Source: Based on the model results.

Table 7: Results from the Extraction of Pará - 1996 (in R$ thousand)							
		Y	C+I+G	X	M	X*	M*
SE	Calibrated	398,331,415	380,790,414	308,570,857	281,144,275	22,275,645	32,161,227
	Extraction	395,553,827		305,681,181	281,032,187		
S	Calibrated	128,778,590	117,529,894	89,484,093	86,598,063	13,460,142	5,097,475
	Extraction	128,213,905		88,881,766	86,560,421		
CO	Calibrated	55,833,483	68,294,202	37,034,727	49,595,460	1,107,259	1,007,244
	Extraction	55,700,900		36,862,377	49,555,693		
NE	Calibrated	93,962,783	108,335,141	40,454,056	53,427,645	3,047,391	4,446,160
	Extraction	93,797,072		40,007,590	53,146,891		
N	Calibrated	33,442,580	41,367,808	11,731,295	16,509,585	1,244,382	4,391,320
	Extraction	33,392,919		11,669,501	16,497,451		
BR	Calibrated	710,348,852	716,317,459	487,275,027	487,275,027	41,134,818	47,103,426
	Extraction	706,658,889		483,104,986	486,794,949		
SP	Calibrated	237,299,180	222,787,455	208,261,347	187,592,574	15,968,679	22,125,726
	Extraction	235,270,332		206,157,374	187,517,450		

Source: Based on the model results.

Table 8: Results from the Extraction of Pará - 2002 (in R$ thousand)							
		Y	C+I+G	X	M	X*	M*
SE	Calibrated	1,190,018,421	1,097,843,991	206,830,879	156,929,885	117,183,348	74,909,911
	Extraction	1,185,134,773		198,369,190	153,351,845		
S	Calibrated	367,727,202	337,572,807	62,991,061	75,176,697	65,590,678	23,250,647
	Extraction	367,059,120		60,728,237	73,581,954		
CO	Calibrated	158,236,136	173,097,174	20,027,921	41,003,927	10,388,856	4,273,888
	Extraction	158,252,353		19,377,791	40,337,580		
NE	Calibrated	266,459,168	276,958,011	37,360,455	51,153,658	13,628,985	10,334,625
	Extraction	265,851,200		35,794,112	50,195,282		
N	Calibrated	92,630,498	94,662,706	17,365,512	20,311,662	9,486,355	8,572,414
	Extraction	92,465,368		16,873,109	19,984,388		
BR	Calibrated	2,075,071,426	1,980,134,688	344,575,829	344,575,829	216,278,223	121,341,485
	Extraction	2,068,770,537		331,190,248	337,491,138		
SP	Calibrated	720,762,956	664,078,365	117,843,459	85,253,100	76,877,141	52,782,909
	Extraction	717,470,032		112,219,027	82,921,592		

Source: Based on the model results.

Table 9: Results from the Extraction of Rondônia - 1996 (in R$ thousand)							
		Y	C+I+G	X	M	X*	M*
SE	Calibrated	398,331,415	380,790,414	308,570,857	281,144,275	22,275,645	32,161,227
	Extraction	397,613,640		307,825,777	281,116,970		
S	Calibrated	128,778,590	117,529,894	89,484,093	86,598,063	13,460,142	5,097,475
	Extraction	128,465,123		89,126,559	86,553,996		
CO	Calibrated	55,833,483	68,294,202	37,034,727	49,595,460	1,107,259	1,007,244
	Extraction	55,729,743		36,872,012	49,536,485		
NE	Calibrated	93,962,783	108,335,141	40,454,056	53,427,645	3,047,391	4,446,160
	Extraction	93,953,589		40,438,589	53,421,373		
N	Calibrated	33,442,580	41,367,808	11,731,295	16,509,585	1,244,382	4,391,320
	Extraction	33,441,345		11,726,152	16,505,676		
BR	Calibrated	710,348,852	716,317,459	487,275,027	487,275,027	41,134,818	47,103,426
	Extraction	709,203,598		485,989,895	487,135,150		
SP	Calibrated	237,299,180	222,787,455	208,261,347	187,592,574	15,968,679	22,125,726
	Extraction	236,726,075		207,669,011	187,573,343		

Source: Based on the model results.

Table 10: Results from the Extraction of Rondônia - 2002 (in R$ thousand)							
		Y	C+I+G	X	M	X*	M*
SE	Calibrated	1,190,018,421	1,097,843,991	206,830,879	156,929,885	117,183,348	74,909,911
	Extraction	1,187,429,965		203,476,068	156,163,531		
S	Calibrated	367,727,202	337,572,807	62,991,061	75,176,697	65,590,678	23,250,647
	Extraction	367,498,156		62,111,580	74,526,262		
CO	Calibrated	158,236,136	173,097,174	20,027,921	41,003,927	10,388,856	4,273,888
	Extraction	157,870,508		19,461,805	40,803,439		
NE	Calibrated	266,459,168	276,958,011	37,360,455	51,153,658	13,628,985	10,334,625
	Extraction	266,085,972		36,825,072	50,991,470		
N	Calibrated	92,630,498	94,662,706	17,365,512	20,311,662	9,486,355	8,572,414
	Extraction	92,509,582		17,041,111	20,108,177		
BR	Calibrated	2,075,071,426	1,980,134,688	344,575,829	344,575,829	216,278,223	121,341,485
	Extraction	2,071,394,929		338,921,658	342,598,155		
SP	Calibrated	720,762,956	664,078,365	117,843,459	85,253,100	76,877,141	52,782,909
	Extraction	719,026,960		115,598,167	84,743,804		

Source: Based on the model results.

Table 11: Results from the Extraction of Roraima - 1996 (in R$ thousand)							
		Y	C+I+G	X	M	X*	M*
SE	Calibrated	398,331,415	380,790,414	308,570,857	281,144,275	22,275,645	32,161,227
	Extraction	398,129,374		308,363,694	281,139,153		
S	Calibrated	128,778,590	117,529,894	89,484,093	86,598,063	13,460,142	5,097,475
	Extraction	128,693,002		89,396,164	86,595,723		
CO	Calibrated	55,833,483	68,294,202	37,034,727	49,595,460	1,107,259	1,007,244
	Extraction	55,825,173		37,025,447	49,594,490		
NE	Calibrated	93,962,783	108,335,141	40,454,056	53,427,645	3,047,391	4,446,160
	Extraction	93,954,447		40,442,204	53,424,129		
N	Calibrated	33,442,580	41,367,808	11,731,295	16,509,585	1,244,382	4,391,320
	Extraction	33,441,972		11,730,575	16,509,473		
BR	Calibrated	710,348,852	716,317,459	487,275,027	487,275,027	41,134,818	47,103,426
	Extraction	710,043,968		486,958,087	487,262,971		
SP	Calibrated	237,299,180	222,787,455	208,261,347	187,592,574	15,968,679	22,125,726
	Extraction	237,149,902		208,109,185	187,589,690		

Source: Based on the model results.

Table 12: Results from the Extraction of Roraima - 2002 (in R$ thousand)							
		Y	C+I+G	X	M	X*	M*
SE	Calibrated	1,190,018,421	1,097,843,991	206,830,879	156,929,885	117,183,348	74,909,911
	Extraction	1,189,524,550		206,256,895	156,849,773		
S	Calibrated	367,727,202	337,572,807	62,991,061	75,176,697	65,590,678	23,250,647
	Extraction	367,608,549		62,839,132	75,143,421		
CO	Calibrated	158,236,136	173,097,174	20,027,921	41,003,927	10,388,856	4,273,888
	Extraction	158,215,731		19,989,966	40,986,377		
NE	Calibrated	266,459,168	276,958,011	37,360,455	51,153,658	13,628,985	10,334,625
	Extraction	266,382,195		37,269,534	51,139,710		
N	Calibrated	92,630,498	94,662,706	17,365,512	20,311,662	9,486,355	8,572,414
	Extraction	92,588,193		17,312,552	20,301,005		
BR	Calibrated	2,075,071,426	1,980,134,688	344,575,829	344,575,829	216,278,223	121,341,485
	Extraction	2,074,319,226		343,668,142	344,420,342		
SP	Calibrated	720,762,956	664,078,365	117,843,459	85,253,100	76,877,141	52,782,909
	Extraction	720,447,458		117,468,374	85,193,514		

Source: Based on the model results.

Table 13: Results from the Extraction of Tocantins - 1996 (in R$ thousand)							
		Y	**C+I+G**	**X**	**M**	**X***	**M***
SE	Calibrated	398,331,415	380,790,414	308,570,857	281,144,275	22,275,645	32,161,227
	Extraction	397,907,089		308,133,875	281,131,620		
S	Calibrated	128,778,590	117,529,894	89,484,093	86,598,063	13,460,142	5,097,475
	Extraction	128,695,485		89,398,687	86,595,762		
CO	Calibrated	55,833,483	68,294,202	37,034,727	49,595,460	1,107,259	1,007,244
	Extraction	55,682,596		36,871,459	49,583,079		
NE	Calibrated	93,962,783	108,335,141	40,454,056	53,427,645	3,047,391	4,446,160
	Extraction	93,982,755		40,435,554	53,389,171		
N	Calibrated	33,442,580	41,367,808	11,731,295	16,509,585	1,244,382	4,391,320
	Extraction	33,461,219		11,721,724	16,481,375		
BR	Calibrated	710,348,852	716,317,459	487,275,027	487,275,027	41,134,818	47,103,426
	Extraction	709,729,142		486,561,388	487,181,098		
SP	Calibrated	237,299,180	222,787,455	208,261,347	187,592,574	15,968,679	22,125,726
	Extraction	237,056,974		208,012,954	187,586,388		

Source: Based on the model results.

Table 14: Results from the Extraction of Tocantins - 2002 (in R$ thousand)							
		Y	**C+I+G**	**X**	**M**	**X***	**M***
SE	Calibrated	1,190,018,421	1,097,843,991	206,830,879	156,929,885	117,183,348	74,909,911
	Extraction	1,188,555,270		204,886,445	156,448,603		
S	Calibrated	367,727,202	337,572,807	62,991,061	75,176,697	65,590,678	23,250,647
	Extraction	367,307,970		62,462,861	75,067,729		
CO	Calibrated	158,236,136	173,097,174	20,027,921	41,003,927	10,388,856	4,273,888
	Extraction	158,024,520		19,663,635	40,851,257		
NE	Calibrated	266,459,168	276,958,011	37,360,455	51,153,658	13,628,985	10,334,625
	Extraction	266,271,905		37,009,345	50,989,810		
N	Calibrated	92,630,498	94,662,706	17,365,512	20,311,662	9,486,355	8,572,414
	Extraction	92,597,844		17,246,156	20,224,960		
BR	Calibrated	2,075,071,426	1,980,134,688	344,575,829	344,575,829	216,278,223	121,341,485
	Extraction	2,072,757,754		341,270,227	343,583,899		
SP	Calibrated	720,762,956	664,078,365	117,843,459	85,253,100	76,877,141	52,782,909
	Extraction	719,699,410		116,598,664	85,071,852		

Source: Based on the model results.

Table 15: Results from the Extraction of Alagoas - 1996 (in R$ thousand)							
		Y	**C+I+G**	**X**	**M**	**X***	**M***
SE	Calibrated	398,331,415	380,790,414	308,570,857	281,144,275	22,275,645	32,161,227
	Extraction	396,914,564		307,109,401	281,099,670		
S	Calibrated	128,778,590	117,529,894	89,484,093	86,598,063	13,460,142	5,097,475
	Extraction	128,550,890		89,230,194	86,571,864		
CO	Calibrated	55,833,483	68,294,202	37,034,727	49,595,460	1,107,259	1,007,244
	Extraction	55,820,399		37,013,447	49,587,263		
NE	Calibrated	93,962,783	108,335,141	40,454,056	53,427,645	3,047,391	4,446,160
	Extraction	93,451,889		39,492,926	52,977,410		
N	Calibrated	33,442,580	41,367,808	11,731,295	16,509,585	1,244,382	4,391,320
	Extraction	33,435,198		11,688,715	16,474,387		
BR	Calibrated	710,348,852	716,317,459	487,275,027	487,275,027	41,134,818	47,103,426
	Extraction	708,173,579		484,540,493	486,715,765		
SP	Calibrated	237,299,180	222,787,455	208,261,347	187,592,574	15,968,679	22,125,726
	Extraction	236,349,620		207,280,984	187,561,771		

Source: Based on the model results.

Table 16: Results from the Extraction of Alagoas - 2002 (in R$ thousand)

		Y	C+I+G	X	M	X*	M*
SE	Calibrated	1,190,018,421	1,097,843,991	206,830,879	156,929,885	117,183,348	74,909,911
	Extraction	1,187,511,831		203,541,626	156,147,223		
S	Calibrated	367,727,202	337,572,807	62,991,061	75,176,697	65,590,678	23,250,647
	Extraction	367,238,792		62,131,598	74,805,644		
CO	Calibrated	158,236,136	173,097,174	20,027,921	41,003,927	10,388,856	4,273,888
	Extraction	158,233,278		19,822,576	40,801,440		
NE	Calibrated	266,459,168	276,958,011	37,360,455	51,153,658	13,628,985	10,334,625
	Extraction	266,005,944		36,111,865	50,358,291		
N	Calibrated	92,630,498	94,662,706	17,365,512	20,311,662	9,486,355	8,572,414
	Extraction	92,540,812		17,186,058	20,221,893		
BR	Calibrated	2,075,071,426	1,980,134,688	344,575,829	344,575,829	216,278,223	121,341,485
	Extraction	2,071,532,200		338,802,631	342,341,858		
SP	Calibrated	720,762,956	664,078,365	117,843,459	85,253,100	76,877,141	52,782,909
	Extraction	719,091,775		115,661,270	84,742,093		

Source: Based on the model results.

Table 17: Results from the Extraction of Bahia - 1996 (in R$ thousand)

		Y	C+I+G	X	M	X*	M*
SE	Calibrated	398,331,415	380,790,414	308,570,857	281,144,275	22,275,645	32,161,227
	Extraction	389,845,962		299,386,294	280,445,164		
S	Calibrated	128,778,590	117,529,894	89,484,093	86,598,063	13,460,142	5,097,475
	Extraction	127,211,575		87,796,057	86,477,042		
CO	Calibrated	55,833,483	68,294,202	37,034,727	49,595,460	1,107,259	1,007,244
	Extraction	55,716,193		36,804,484	49,482,507		
NE	Calibrated	93,962,783	108,335,141	40,454,056	53,427,645	3,047,391	4,446,160
	Extraction	94,008,958		39,161,000	52,088,414		
N	Calibrated	33,442,580	41,367,808	11,731,295	16,509,585	1,244,382	4,391,320
	Extraction	33,307,003		11,461,120	16,374,986		
BR	Calibrated	710,348,852	716,317,459	487,275,027	487,275,027	41,134,818	47,103,426
	Extraction	700,095,733		474,661,997	484,915,116		
SP	Calibrated	237,299,180	222,787,455	208,261,347	187,592,574	15,968,679	22,125,726
	Extraction	231,836,227		202,309,775	187,103,955		

Source: Based on the model results.

Table 18: Results from the Extraction of Bahia - 2002 (in R$ thousand)

		Y	C+I+G	X	M	X*	M*
SE	Calibrated	1,190,018,421	1,097,843,991	206,830,879	156,929,885	117,183,348	74,909,911
	Extraction	1,185,788,772		188,188,355	142,517,010		
S	Calibrated	367,727,202	337,572,807	62,991,061	75,176,697	65,590,678	23,250,647
	Extraction	369,014,760		59,445,119	70,343,197		
CO	Calibrated	158,236,136	173,097,174	20,027,921	41,003,927	10,388,856	4,273,888
	Extraction	160,162,577		19,168,280	38,217,845		
NE	Calibrated	266,459,168	276,958,011	37,360,455	51,153,658	13,628,985	10,334,625
	Extraction	266,539,997		33,918,802	47,631,175		
N	Calibrated	92,630,498	94,662,706	17,365,512	20,311,662	9,486,355	8,572,414
	Extraction	93,096,759		16,450,493	18,930,382		
BR	Calibrated	2,075,071,426	1,980,134,688	344,575,829	344,575,829	216,278,223	121,341,485
	Extraction	2,074,728,990		317,604,422	317,946,858		
SP	Calibrated	720,762,956	664,078,365	117,843,459	85,253,100	76,877,141	52,782,909
	Extraction	719,942,605		107,079,879	75,309,871		

Source: Based on the model results.

Table 19: Results from the Extraction of Ceará - 1996 (in R$ thousand)							
		Y	C+I+G	X	M	X*	M*
SE	Calibrated	398,331,415	380,790,414	308,570,857	281,144,275	22,275,645	32,161,227
	Extraction	395,271,695		305,363,319	280,996,457		
S	Calibrated	128,778,590	117,529,894	89,484,093	86,598,063	13,460,142	5,097,475
	Extraction	128,098,505		88,737,866	86,531,921		
CO	Calibrated	55,833,483	68,294,202	37,034,727	49,595,460	1,107,259	1,007,244
	Extraction	55,813,141		36,944,667	49,525,742		
NE	Calibrated	93,962,783	108,335,141	40,454,056	53,427,645	3,047,391	4,446,160
	Extraction	93,988,438		39,499,155	52,447,090		
N	Calibrated	33,442,580	41,367,808	11,731,295	16,509,585	1,244,382	4,391,320
	Extraction	33,386,686		11,539,881	16,374,064		
BR	Calibrated	710,348,852	716,317,459	487,275,027	487,275,027	41,134,818	47,103,426
	Extraction	706,560,420		482,101,049	485,889,481		
SP	Calibrated	237,299,180	222,787,455	208,261,347	187,592,574	15,968,679	22,125,726
	Extraction	235,006,901		205,868,497	187,492,004		

Source: Based on the model results.

Table 20: Results from the Extraction of Ceará - 2002 (in R$ thousand)							
		Y	C+I+G	X	M	X*	M*
SE	Calibrated	1,190,018,421	1,097,843,991	206,830,879	156,929,885	117,183,348	74,909,911
	Extraction	1,182,158,951		196,789,477	154,747,953		
S	Calibrated	367,727,202	337,572,807	62,991,061	75,176,697	65,590,678	23,250,647
	Extraction	366,287,593		60,695,239	74,320,484		
CO	Calibrated	158,236,136	173,097,174	20,027,921	41,003,927	10,388,856	4,273,888
	Extraction	157,928,675		19,225,616	40,509,084		
NE	Calibrated	266,459,168	276,958,011	37,360,455	51,153,658	13,628,985	10,334,625
	Extraction	265,448,196		34,679,607	49,483,782		
N	Calibrated	92,630,498	94,662,706	17,365,512	20,311,662	9,486,355	8,572,414
	Extraction	92,384,366		16,819,336	20,011,617		
BR	Calibrated	2,075,071,426	1,980,134,688	344,575,829	344,575,829	216,278,223	121,341,485
	Extraction	2,064,218,091		328,257,294	339,110,629		
SP	Calibrated	720,762,956	664,078,365	117,843,459	85,253,100	76,877,141	52,782,909
	Extraction	715,958,250		111,602,277	83,816,624		

Source: Based on the model results.

Table 21: Results from the Extraction of Maranhão - 1996 (in R$ thousand)							
		Y	C+I+G	X	M	X*	M*
SE	Calibrated	398,331,415	380,790,414	308,570,857	281,144,275	22,275,645	32,161,227
	Extraction	396,681,028		306,884,769	281,108,574		
S	Calibrated	128,778,590	117,529,894	89,484,093	86,598,063	13,460,142	5,097,475
	Extraction	128,480,959		89,166,707	86,578,308		
CO	Calibrated	55,833,483	68,294,202	37,034,727	49,595,460	1,107,259	1,007,244
	Extraction	55,768,184		36,955,645	49,581,677		
NE	Calibrated	93,962,783	108,335,141	40,454,056	53,427,645	3,047,391	4,446,160
	Extraction	93,749,646		40,118,817	53,305,543		
N	Calibrated	33,442,580	41,367,808	11,731,295	16,509,585	1,244,382	4,391,320
	Extraction	33,422,456		11,646,009	16,444,423		
BR	Calibrated	710,348,852	716,317,459	487,275,027	487,275,027	41,134,818	47,103,426
	Extraction	708,102,427		484,773,135	487,019,560		
SP	Calibrated	237,299,180	222,787,455	208,261,347	187,592,574	15,968,679	22,125,726
	Extraction	236,145,495		207,084,304	187,569,217		

Source: Based on the model results.

Table 22: Results from the Extraction of Maranhão - 2002 (in R$ thousand)							
		Y	C+I+G	X	M	X*	M*
SE	Calibrated	1,190,018,421	1,097,843,991	206,830,879	156,929,885	117,183,348	74,909,911
	Extraction	1,187,252,725		202,766,361	155,631,064		
S	Calibrated	367,727,202	337,572,807	62,991,061	75,176,697	65,590,678	23,250,647
	Extraction	367,250,007		62,016,324	74,679,156		
CO	Calibrated	158,236,136	173,097,174	20,027,921	41,003,927	10,388,856	4,273,888
	Extraction	158,211,891		19,783,111	40,783,362		
NE	Calibrated	266,459,168	276,958,011	37,360,455	51,153,658	13,628,985	10,334,625
	Extraction	266,120,666		36,491,566	50,623,271		
N	Calibrated	92,630,498	94,662,706	17,365,512	20,311,662	9,486,355	8,572,414
	Extraction	92,538,045		16,957,305	19,995,908		
BR	Calibrated	2,075,071,426	1,980,134,688	344,575,829	344,575,829	216,278,223	121,341,485
	Extraction	2,071,376,147		338,026,412	341,721,692		
SP	Calibrated	720,762,956	664,078,365	117,843,459	85,253,100	76,877,141	52,782,909
	Extraction	718,978,434		115,233,576	84,427,739		

Source: Based on the model results.

Table 23: Results from the Extraction of Paraíba - 1996 (in R$ thousand)							
		Y	C+I+G	X	M	X*	M*
SE	Calibrated	398,331,415	380,790,414	308,570,857	281,144,275	22,275,645	32,161,227
	Extraction	397,165,095		307,366,421	281,106,159		
S	Calibrated	128,778,590	117,529,894	89,484,093	86,598,063	13,460,142	5,097,475
	Extraction	128,522,304		89,210,476	86,580,732		
CO	Calibrated	55,833,483	68,294,202	37,034,727	49,595,460	1,107,259	1,007,244
	Extraction	55,821,097		37,005,182	49,578,301		
NE	Calibrated	93,962,783	108,335,141	40,454,056	53,427,645	3,047,391	4,446,160
	Extraction	93,547,088		39,619,367	53,008,651		
N	Calibrated	33,442,580	41,367,808	11,731,295	16,509,585	1,244,382	4,391,320
	Extraction	33,428,787		11,692,530	16,484,613		
BR	Calibrated	710,348,852	716,317,459	487,275,027	487,275,027	41,134,818	47,103,426
	Extraction	708,485,947		484,899,634	486,762,539		
SP	Calibrated	237,299,180	222,787,455	208,261,347	187,592,574	15,968,679	22,125,726
	Extraction	236,423,221		207,363,020	187,570,207		

Source: Based on the model results.

Table 24: Results from the Extraction of Paraíba - 2002 (in R$ thousand)							
		Y	C+I+G	X	M	X*	M*
SE	Calibrated	1,190,018,421	1,097,843,991	206,830,879	156,929,885	117,183,348	74,909,911
	Extraction	1,186,816,903		202,683,604	155,984,129		
S	Calibrated	367,727,202	337,572,807	62,991,061	75,176,697	65,590,678	23,250,647
	Extraction	367,032,948		61,868,207	74,748,097		
CO	Calibrated	158,236,136	173,097,174	20,027,921	41,003,927	10,388,856	4,273,888
	Extraction	158,085,386		19,620,595	40,747,351		
NE	Calibrated	266,459,168	276,958,011	37,360,455	51,153,658	13,628,985	10,334,625
	Extraction	265,891,737		35,584,165	49,944,799		
N	Calibrated	92,630,498	94,662,706	17,365,512	20,311,662	9,486,355	8,572,414
	Extraction	92,521,178		17,108,656	20,164,125		
BR	Calibrated	2,075,071,426	1,980,134,688	344,575,829	344,575,829	216,278,223	121,341,485
	Extraction	2,070,350,867		336,880,214	341,600,773		
SP	Calibrated	720,762,956	664,078,365	117,843,459	85,253,100	76,877,141	52,782,909
	Extraction	718,541,287		115,073,730	84,705,041		

Source: Based on the model results.

Table 25: Results from the Extraction of Pernambuco - 1996 (in R$ thousand)

		Y	C+I+G	X	M	X*	M*
SE	Calibrated	398,331,415	380,790,414	308,570,857	281,144,275	22,275,645	32,161,227
	Extraction	394,718,469		304,776,590	280,962,954		
S	Calibrated	128,778,590	117,529,894	89,484,093	86,598,063	13,460,142	5,097,475
	Extraction	128,086,531		88,758,650	86,564,680		
CO	Calibrated	55,833,483	68,294,202	37,034,727	49,595,460	1,107,259	1,007,244
	Extraction	55,858,831		36,957,559	49,492,944		
NE	Calibrated	93,962,783	108,335,141	40,454,056	53,427,645	3,047,391	4,446,160
	Extraction	94,881,215		39,285,622	51,340,780		
N	Calibrated	33,442,580	41,367,808	11,731,295	16,509,585	1,244,382	4,391,320
	Extraction	33,457,860		11,594,837	16,357,847		
BR	Calibrated	710,348,852	716,317,459	487,275,027	487,275,027	41,134,818	47,103,426
	Extraction	707,006,218		481,412,944	484,755,578		
SP	Calibrated	237,299,180	222,787,455	208,261,347	187,592,574	15,968,679	22,125,726
	Extraction	234,647,066		205,473,315	187,456,656		

Source: Based on the model results.

Table 26: Results from the Extraction of Pernambuco - 2002 (in R$ thousand)

		Y	C+I+G	X	M	X*	M*
SE	Calibrated	1,190,018,421	1,097,843,991	206,830,879	156,929,885	117,183,348	74,909,911
	Extraction	1,180,309,533		194,720,886	154,528,781		
S	Calibrated	367,727,202	337,572,807	62,991,061	75,176,697	65,590,678	23,250,647
	Extraction	366,001,235		60,362,877	74,274,481		
CO	Calibrated	158,236,136	173,097,174	20,027,921	41,003,927	10,388,856	4,273,888
	Extraction	158,026,969		19,283,645	40,468,818		
NE	Calibrated	266,459,168	276,958,011	37,360,455	51,153,658	13,628,985	10,334,625
	Extraction	266,192,528		33,963,459	48,023,302		
N	Calibrated	92,630,498	94,662,706	17,365,512	20,311,662	9,486,355	8,572,414
	Extraction	92,306,291		16,711,565	19,981,921		
BR	Calibrated	2,075,071,426	1,980,134,688	344,575,829	344,575,829	216,278,223	121,341,485
	Extraction	2,062,855,068		325,128,748	337,345,107		
SP	Calibrated	720,762,956	664,078,365	117,843,459	85,253,100	76,877,141	52,782,909
	Extraction	714,549,766		109,967,810	83,590,642		

Source: Based on the model results.

Table 27: Results from the Extraction of Piauí - 1996 (in R$ thousand)

		Y	C+I+G	X	M	X*	M*
SE	Calibrated	398,331,415	380,790,414	308,570,857	281,144,275	22,275,645	32,161,227
	Extraction	397,738,673		307,962,641	281,128,801		
S	Calibrated	128,778,590	117,529,894	89,484,093	86,598,063	13,460,142	5,097,475
	Extraction	128,654,927		89,355,480	86,593,114		
CO	Calibrated	55,833,483	68,294,202	37,034,727	49,595,460	1,107,259	1,007,244
	Extraction	55,818,008		37,015,953	49,592,161		
NE	Calibrated	93,962,783	108,335,141	40,454,056	53,427,645	3,047,391	4,446,160
	Extraction	93,733,829		40,136,148	53,338,691		
N	Calibrated	33,442,580	41,367,808	11,731,295	16,509,585	1,244,382	4,391,320
	Extraction	33,441,600		11,687,746	16,467,016		
BR	Calibrated	710,348,852	716,317,459	487,275,027	487,275,027	41,134,818	47,103,426
	Extraction	709,387,144		486,158,705	487,120,413		
SP	Calibrated	237,299,180	222,787,455	208,261,347	187,592,574	15,968,679	22,125,726
	Extraction	236,872,335		207,822,578	187,580,651		

Source: Based on the model results.

Table 28: Results from the Extraction of Piauí - 2002 (in R$ thousand)							
		Y	**C+I+G**	**X**	**M**	**X***	**M***
SE	Calibrated	1,190,018,421	1,097,843,991	206,830,879	156,929,885	117,183,348	74,909,911
	Extraction	1,188,198,779		204,762,048	156,680,696		
S	Calibrated	367,727,202	337,572,807	62,991,061	75,176,697	65,590,678	23,250,647
	Extraction	367,209,361		62,392,552	75,096,029		
CO	Calibrated	158,236,136	173,097,174	20,027,921	41,003,927	10,388,856	4,273,888
	Extraction	158,088,233		19,825,235	40,949,144		
NE	Calibrated	266,459,168	276,958,011	37,360,455	51,153,658	13,628,985	10,334,625
	Extraction	265,899,195		36,555,170	50,908,346		
N	Calibrated	92,630,498	94,662,706	17,365,512	20,311,662	9,486,355	8,572,414
	Extraction	92,523,415		17,215,749	20,268,982		
BR	Calibrated	2,075,071,426	1,980,134,688	344,575,829	344,575,829	216,278,223	121,341,485
	Extraction	2,071,919,207		340,752,669	343,904,888		
SP	Calibrated	720,762,956	664,078,365	117,843,459	85,253,100	76,877,141	52,782,909
	Extraction	719,542,763		116,472,321	85,102,155		

Source: Based on the model results.

Table 29: Results from the Extraction of Rio Grande do Norte - 1996 (in R$ thousand)							
		Y	**C+I+G**	**X**	**M**	**X***	**M***
SE	Calibrated	398,331,415	380,790,414	308,570,857	281,144,275	22,275,645	32,161,227
	Extraction	397,164,447		307,333,406	281,073,792		
S	Calibrated	128,778,590	117,529,894	89,484,093	86,598,063	13,460,142	5,097,475
	Extraction	128,477,665		89,161,590	86,576,485		
CO	Calibrated	55,833,483	68,294,202	37,034,727	49,595,460	1,107,259	1,007,244
	Extraction	55,815,986		36,998,789	49,577,019		
NE	Calibrated	93,962,783	108,335,141	40,454,056	53,427,645	3,047,391	4,446,160
	Extraction	93,492,990		39,677,306	53,120,688		
N	Calibrated	33,442,580	41,367,808	11,731,295	16,509,585	1,244,382	4,391,320
	Extraction	33,429,803		11,710,661	16,501,728		
BR	Calibrated	710,348,852	716,317,459	487,275,027	487,275,027	41,134,818	47,103,426
	Extraction	708,381,322		484,885,712	486,853,242		
SP	Calibrated	237,299,180	222,787,455	208,261,347	187,592,574	15,968,679	22,125,726
	Extraction	236,485,866		207,392,869	187,537,411		

Source: Based on the model results.

Table 30: Results from the Extraction of Rio Grande do Norte - 2002 (in R$ thousand)							
		Y	**C+I+G**	**X**	**M**	**X***	**M***
SE	Calibrated	1,190,018,421	1,097,843,991	206,830,879	156,929,885	117,183,348	74,909,911
	Extraction	1,188,110,589		202,700,377	154,707,216		
S	Calibrated	367,727,202	337,572,807	62,991,061	75,176,697	65,590,678	23,250,647
	Extraction	367,294,168		61,802,098	74,420,768		
CO	Calibrated	158,236,136	173,097,174	20,027,921	41,003,927	10,388,856	4,273,888
	Extraction	158,132,075		19,565,513	40,645,579		
NE	Calibrated	266,459,168	276,958,011	37,360,455	51,153,658	13,628,985	10,334,625
	Extraction	265,335,417		35,570,297	50,487,250		
N	Calibrated	92,630,498	94,662,706	17,365,512	20,311,662	9,486,355	8,572,414
	Extraction	92,535,498		17,106,739	20,147,889		
BR	Calibrated	2,075,071,426	1,980,134,688	344,575,829	344,575,829	216,278,223	121,341,485
	Extraction	2,071,409,816		336,761,327	340,422,937		
SP	Calibrated	720,762,956	664,078,365	117,843,459	85,253,100	76,877,141	52,782,909
	Extraction	719,654,841		115,140,861	83,658,617		

Source: Based on the model results.

Table 31: Results from the Extraction of Sergipe - 1996 (in R$ thousand)							
		Y	**C+I+G**	**X**	**M**	**X***	**M***
SE	Calibrated	398,331,415	380,790,414	308,570,857	281,144,275	22,275,645	32,161,227
	Extraction	397,722,966		307,910,496	281,092,363		
S	Calibrated	128,778,590	117,529,894	89,484,093	86,598,063	13,460,142	5,097,475
	Extraction	128,586,223		89,204,900	86,511,237		
CO	Calibrated	55,833,483	68,294,202	37,034,727	49,595,460	1,107,259	1,007,244
	Extraction	55,831,015		37,013,549	49,576,751		
NE	Calibrated	93,962,783	108,335,141	40,454,056	53,427,645	3,047,391	4,446,160
	Extraction	93,903,400		40,017,870	53,050,842		
N	Calibrated	33,442,580	41,367,808	11,731,295	16,509,585	1,244,382	4,391,320
	Extraction	33,444,957		11,715,512	16,491,424		
BR	Calibrated	710,348,852	716,317,459	487,275,027	487,275,027	41,134,818	47,103,426
	Extraction	709,488,742		485,864,397	486,724,506		
SP	Calibrated	237,299,180	222,787,455	208,261,347	187,592,574	15,968,679	22,125,726
	Extraction	236,863,782		207,792,862	187,559,488		

Source: Based on the model results.

Table 32: Results from the Extraction of Sergipe - 2002 (in R$ thousand)							
		Y	**C+I+G**	**X**	**M**	**X***	**M***
SE	Calibrated	1,190,018,421	1,097,843,991	206,830,879	156,929,885	117,183,348	74,909,911
	Extraction	1,188,992,691		204,164,800	155,289,537		
S	Calibrated	367,727,202	337,572,807	62,991,061	75,176,697	65,590,678	23,250,647
	Extraction	367,602,536		62,285,814	74,596,116		
CO	Calibrated	158,236,136	173,097,174	20,027,921	41,003,927	10,388,856	4,273,888
	Extraction	158,441,479		19,864,150	40,634,813		
NE	Calibrated	266,459,168	276,958,011	37,360,455	51,153,658	13,628,985	10,334,625
	Extraction	266,692,267		36,343,377	49,903,481		
N	Calibrated	92,630,498	94,662,706	17,365,512	20,311,662	9,486,355	8,572,414
	Extraction	92,628,708		17,213,859	20,161,798		
BR	Calibrated	2,075,071,426	1,980,134,688	344,575,829	344,575,829	216,278,223	121,341,485
	Extraction	2,074,357,983		339,882,227	340,595,670		
SP	Calibrated	720,762,956	664,078,365	117,843,459	85,253,100	76,877,141	52,782,909
	Extraction	720,172,754		116,099,103	84,098,946		

Source: Based on the model results.

Table 33: Results from the Extraction of Espírito Santo - 1996 (in R$ thousand)							
		Y	**C+I+G**	**X**	**M**	**X***	**M***
SE	Calibrated	398,331,415	380,790,414	308,570,857	281,144,275	22,275,645	32,161,227
	Extraction	397,676,536		306,855,262	280,083,558		
S	Calibrated	128,778,590	117,529,894	89,484,093	86,598,063	13,460,142	5,097,475
	Extraction	128,789,446		89,303,053	86,406,167		
CO	Calibrated	55,833,483	68,294,202	37,034,727	49,595,460	1,107,259	1,007,244
	Extraction	56,097,993		36,994,214	49,290,437		
NE	Calibrated	93,962,783	108,335,141	40,454,056	53,427,645	3,047,391	4,446,160
	Extraction	94,453,342		40,355,203	52,838,234		
N	Calibrated	33,442,580	41,367,808	11,731,295	16,509,585	1,244,382	4,391,320
	Extraction	33,516,420		11,717,151	16,421,601		
BR	Calibrated	710,348,852	716,317,459	487,275,027	487,275,027	41,134,818	47,103,426
	Extraction	710,534,902		485,229,923	485,043,872		
SP	Calibrated	237,299,180	222,787,455	208,261,347	187,592,574	15,968,679	22,125,726
	Extraction	237,238,336		207,511,729	186,903,800		

Source: Based on the model results.

Table 34: Results from the Extraction of Espírito Santo - 2002 (in R$ thousand)							
		Y	**C+I+G**	**X**	**M**	**X***	**M***
SE	Calibrated	1,190,018,421	1,097,843,991	206,830,879	156,929,885	117,183,348	74,909,911
	Extraction	1,187,445,480		194,115,938	146,787,886		
S	Calibrated	367,727,202	337,572,807	62,991,061	75,176,697	65,590,678	23,250,647
	Extraction	367,329,179		60,554,404	73,138,064		
CO	Calibrated	158,236,136	173,097,174	20,027,921	41,003,927	10,388,856	4,273,888
	Extraction	158,437,432		19,315,431	40,090,141		
NE	Calibrated	266,459,168	276,958,011	37,360,455	51,153,658	13,628,985	10,334,625
	Extraction	266,230,351		35,703,346	49,725,366		
N	Calibrated	92,630,498	94,662,706	17,365,512	20,311,662	9,486,355	8,572,414
	Extraction	92,507,816		16,799,804	19,868,636		
BR	Calibrated	2,075,071,426	1,980,134,688	344,575,829	344,575,829	216,278,223	121,341,485
	Extraction	2,072,008,740		326,658,286	329,720,972		
SP	Calibrated	720,762,956	664,078,365	117,843,459	85,253,100	76,877,141	52,782,909
	Extraction	720,197,070		111,043,239	79,018,766		

Source: Based on the model results.

Table 35: Results from the Extraction of Minas Gerais - 1996 (in R$ thousand)							
		Y	**C+I+G**	**X**	**M**	**X***	**M***
SE	Calibrated	398,331,415	380,790,414	308,570,857	281,144,275	22,275,645	32,161,227
	Extraction	397,685,802		304,326,935	277,545,966		
S	Calibrated	128,778,590	117,529,894	89,484,093	86,598,063	13,460,142	5,097,475
	Extraction	128,870,338		88,792,072	85,814,295		
CO	Calibrated	55,833,483	68,294,202	37,034,727	49,595,460	1,107,259	1,007,244
	Extraction	58,175,669		36,760,500	46,979,046		
NE	Calibrated	93,962,783	108,335,141	40,454,056	53,427,645	3,047,391	4,446,160
	Extraction	96,446,792		40,286,503	50,776,084		
N	Calibrated	33,442,580	41,367,808	11,731,295	16,509,585	1,244,382	4,391,320
	Extraction	34,125,453		11,653,028	15,748,444		
BR	Calibrated	710,348,852	716,317,459	487,275,027	487,275,027	41,134,818	47,103,426
	Extraction	715,310,742		481,881,133	476,919,242		
SP	Calibrated	237,299,180	222,787,455	208,261,347	187,592,574	15,968,679	22,125,726
	Extraction	236,479,288		204,922,136	185,073,255		

Source: Based on the model results.

Table 36: Results from the Extraction of Minas Gerais - 2002 (in R$ thousand)							
		Y	**C+I+G**	**X**	**M**	**X***	**M***
SE	Calibrated	1,190,018,421	1,097,843,991	206,830,879	156,929,885	117,183,348	74,909,911
	Extraction	1,173,465,319		160,337,858	126,989,967		
S	Calibrated	367,727,202	337,572,807	62,991,061	75,176,697	65,590,678	23,250,647
	Extraction	366,039,200		52,816,650	66,690,288		
CO	Calibrated	158,236,136	173,097,174	20,027,921	41,003,927	10,388,856	4,273,888
	Extraction	159,556,510		15,146,777	34,802,409		
NE	Calibrated	266,459,168	276,958,011	37,360,455	51,153,658	13,628,985	10,334,625
	Extraction	268,173,935		32,392,845	44,471,280		
N	Calibrated	92,630,498	94,662,706	17,365,512	20,311,662	9,486,355	8,572,414
	Extraction	92,912,810		15,317,470	17,981,307		
BR	Calibrated	2,075,071,426	1,980,134,688	344,575,829	344,575,829	216,278,223	121,341,485
	Extraction	2,060,822,033		278,580,969	292,830,362		
SP	Calibrated	720,762,956	664,078,365	117,843,459	85,253,100	76,877,141	52,782,909
	Extraction	709,210,922		85,394,775	64,356,449		

Source: Based on the model results.

Table 37: Results from the Extraction of Rio de Janeiro - 1996 (in R$ thousand)							
		Y	**C+I+G**	**X**	**M**	**X***	**M***
SE	Calibrated	398,331,415	380,790,414	308,570,857	281,144,275	22,275,645	32,161,227
	Extraction	397,537,639		305,934,880	279,302,074		
S	Calibrated	128,778,590	117,529,894	89,484,093	86,598,063	13,460,142	5,097,475
	Extraction	128,913,658		88,995,623	85,974,527		
CO	Calibrated	55,833,483	68,294,202	37,034,727	49,595,460	1,107,259	1,007,244
	Extraction	56,708,112		36,975,899	48,662,003		
NE	Calibrated	93,962,783	108,335,141	40,454,056	53,427,645	3,047,391	4,446,160
	Extraction	95,513,028		40,353,444	51,776,789		
N	Calibrated	33,442,580	41,367,808	11,731,295	16,509,585	1,244,382	4,391,320
	Extraction	33,691,475		11,670,170	16,199,564		
BR	Calibrated	710,348,852	716,317,459	487,275,027	487,275,027	41,134,818	47,103,426
	Extraction	712,364,719		483,944,156	481,928,289		
SP	Calibrated	237,299,180	222,787,455	208,261,347	187,592,574	15,968,679	22,125,726
	Extraction	236,506,826		206,311,976	186,435,557		

Source: Based on the model results.

Table 38: Results from the Extraction of Rio de Janeiro - 2002 (in R$ thousand)							
		Y	**C+I+G**	**X**	**M**	**X***	**M***
SE	Calibrated	1,190,018,421	1,097,843,991	206,830,879	156,929,885	117,183,348	74,909,911
	Extraction	1,194,412,139		170,181,149	115,886,438		
S	Calibrated	367,727,202	337,572,807	62,991,061	75,176,697	65,590,678	23,250,647
	Extraction	372,667,846		54,715,990	61,960,982		
CO	Calibrated	158,236,136	173,097,174	20,027,921	41,003,927	10,388,856	4,273,888
	Extraction	162,106,461		18,012,598	35,118,279		
NE	Calibrated	266,459,168	276,958,011	37,360,455	51,153,658	13,628,985	10,334,625
	Extraction	271,785,238		33,524,220	41,991,353		
N	Calibrated	92,630,498	94,662,706	17,365,512	20,311,662	9,486,355	8,572,414
	Extraction	93,223,632		15,255,353	17,608,369		
BR	Calibrated	2,075,071,426	1,980,134,688	344,575,829	344,575,829	216,278,223	121,341,485
	Extraction	2,094,286,427		293,520,440	274,305,439		
SP	Calibrated	720,762,956	664,078,365	117,843,459	85,253,100	76,877,141	52,782,909
	Extraction	724,706,123		92,513,793	55,980,266		

Source: Based on the model results.

Table 39: Results from the Extraction of São Paulo - 1996 (in R$ thousand)							
		Y	**C+I+G**	**X**	**M**	**X***	**M***
SE	Calibrated	398,331,415	380,790,414	308,570,857	281,144,275	22,275,645	32,161,227
	Extraction	399,229,330		304,399,804	276,075,307		
S	Calibrated	128,778,590	117,529,894	89,484,093	86,598,063	13,460,142	5,097,475
	Extraction	132,194,238		87,063,235	80,761,558		
CO	Calibrated	55,833,483	68,294,202	37,034,727	49,595,460	1,107,259	1,007,244
	Extraction	64,947,918		36,532,239	39,978,537		
NE	Calibrated	93,962,783	108,335,141	40,454,056	53,427,645	3,047,391	4,446,160
	Extraction	103,239,422		39,828,663	43,525,614		
N	Calibrated	33,442,580	41,367,808	11,731,295	16,509,585	1,244,382	4,391,320
	Extraction	37,147,300		10,972,478	12,046,047		
BR	Calibrated	710,348,852	716,317,459	487,275,027	487,275,027	41,134,818	47,103,426
	Extraction	736,768,857		479,126,024	452,706,019		
SP	Calibrated	237,299,180	222,787,455	208,261,347	187,592,574	15,968,679	22,125,726
	Extraction	216,630,407		-	-		

Source: Based on the model results.

Table 40: Results from the Extraction of São Paulo - 2002 (in R$ thousand)							
		Y	C+I+G	X	M	X*	M*
SE	Calibrated	1,190,018,421	1,097,843,991	206,830,879	156,929,885	117,183,348	74,909,911
	Extraction	1,167,654,432		130,325,556	102,788,552		
S	Calibrated	367,727,202	337,572,807	62,991,061	75,176,697	65,590,678	23,250,647
	Extraction	373,955,289		28,942,981	34,900,531		
CO	Calibrated	158,236,136	173,097,174	20,027,921	41,003,927	10,388,856	4,273,888
	Extraction	170,125,416		9,419,167	18,505,893		
NE	Calibrated	266,459,168	276,958,011	37,360,455	51,153,658	13,628,985	10,334,625
	Extraction	269,512,892		17,573,526	28,313,004		
N	Calibrated	92,630,498	94,662,706	17,365,512	20,311,662	9,486,355	8,572,414
	Extraction	91,075,157		5,907,900	10,409,391		
BR	Calibrated	2,075,071,426	1,980,134,688	344,575,829	344,575,829	216,278,223	121,341,485
	Extraction	2,076,887,405		209,230,000	207,414,021		
SP	Calibrated	720,762,956	664,078,365	117,843,459	85,253,100	76,877,141	52,782,909
	Extraction	688,172,597		-	-		

Source: Based on the model results.

Table 41: Results from the Extraction of Paraná - 1996 (in R$ thousand)							
		Y	C+I+G	X	M	X*	M*
SE	Calibrated	398,331,415	380,790,414	308,570,857	281,144,275	22,275,645	32,161,227
	Extraction	396,006,268		304,496,918	279,395,482		
S	Calibrated	128,778,590	117,529,894	89,484,093	86,598,063	13,460,142	5,097,475
	Extraction	128,756,117		88,167,796	85,304,240		
CO	Calibrated	55,833,483	68,294,202	37,034,727	49,595,460	1,107,259	1,007,244
	Extraction	57,720,390		36,614,649	47,288,475		
NE	Calibrated	93,962,783	108,335,141	40,454,056	53,427,645	3,047,391	4,446,160
	Extraction	94,948,704		40,288,493	52,276,162		
N	Calibrated	33,442,580	41,367,808	11,731,295	16,509,585	1,244,382	4,391,320
	Extraction	33,785,401		11,614,484	16,049,953		
BR	Calibrated	710,348,852	716,317,459	487,275,027	487,275,027	41,134,818	47,103,426
	Extraction	711,221,876		481,262,547	480,389,523		
SP	Calibrated	237,299,180	222,787,455	208,261,347	187,592,574	15,968,679	22,125,726
	Extraction	235,227,393		204,920,711	186,323,725		

Source: Based on the model results.

Table 42: Results from the Extraction of Paraná - 2002 (in R$ thousand)							
		Y	C+I+G	X	M	X*	M*
SE	Calibrated	1,190,018,421	1,097,843,991	206,830,879	156,929,885	117,183,348	74,909,911
	Extraction	1,174,955,079		170,152,485	135,314,833		
S	Calibrated	367,727,202	337,572,807	62,991,061	75,176,697	65,590,678	23,250,647
	Extraction	366,421,139		53,687,233	67,178,932		
CO	Calibrated	158,236,136	173,097,174	20,027,921	41,003,927	10,388,856	4,273,888
	Extraction	159,620,021		16,620,949	36,213,070		
NE	Calibrated	266,459,168	276,958,011	37,360,455	51,153,658	13,628,985	10,334,625
	Extraction	266,550,119		33,264,689	46,966,940		
N	Calibrated	92,630,498	94,662,706	17,365,512	20,311,662	9,486,355	8,572,414
	Extraction	92,677,134		15,515,602	18,415,115		
BR	Calibrated	2,075,071,426	1,980,134,688	344,575,829	344,575,829	216,278,223	121,341,485
	Extraction	2,060,520,919		290,494,248	305,044,755		
SP	Calibrated	720,762,956	664,078,365	117,843,459	85,253,100	76,877,141	52,782,909
	Extraction	710,402,662		93,384,727	71,154,662		

Source: Based on the model results.

Table 43: Results from the Extraction of Santa Catarina - 1996 (in R$ thousand)							
		Y	C+I+G	X	M	X*	M*
SE	Calibrated	398,331,415	380,790,414	308,570,857	281,144,275	22,275,645	32,161,227
	Extraction	397,848,736		307,089,655	280,145,752		
S	Calibrated	128,778,590	117,529,894	89,484,093	86,598,063	13,460,142	5,097,475
	Extraction	128,839,760		88,300,903	85,353,704		
CO	Calibrated	55,833,483	68,294,202	37,034,727	49,595,460	1,107,259	1,007,244
	Extraction	56,498,359		36,957,251	48,853,108		
NE	Calibrated	93,962,783	108,335,141	40,454,056	53,427,645	3,047,391	4,446,160
	Extraction	94,787,660		40,361,904	52,510,617		
N	Calibrated	33,442,580	41,367,808	11,731,295	16,509,585	1,244,382	4,391,320
	Extraction	33,734,658		11,695,414	16,181,625		
BR	Calibrated	710,348,852	716,317,459	487,275,027	487,275,027	41,134,818	47,103,426
	Extraction	711,710,733		484,421,042	483,059,161		
SP	Calibrated	237,299,180	222,787,455	208,261,347	187,592,574	15,968,679	22,125,726
	Extraction	236,881,533		207,166,302	186,915,176		

Source: Based on the model results.

Table 44: Results from the Extraction of Santa Catarina - 2002 (in R$ thousand)							
		Y	C+I+G	X	M	X*	M*
SE	Calibrated	1,190,018,421	1,097,843,991	206,830,879	156,929,885	117,183,348	74,909,911
	Extraction	1,177,750,470		183,610,109	145,977,067		
S	Calibrated	367,727,202	337,572,807	62,991,061	75,176,697	65,590,678	23,250,647
	Extraction	366,362,527		54,897,703	68,448,014		
CO	Calibrated	158,236,136	173,097,174	20,027,921	41,003,927	10,388,856	4,273,888
	Extraction	158,557,988		18,316,990	38,971,144		
NE	Calibrated	266,459,168	276,958,011	37,360,455	51,153,658	13,628,985	10,334,625
	Extraction	264,994,695		33,454,839	48,712,514		
N	Calibrated	92,630,498	94,662,706	17,365,512	20,311,662	9,486,355	8,572,414
	Extraction	92,307,334		15,966,579	19,235,892		
BR	Calibrated	2,075,071,426	1,980,134,688	344,575,829	344,575,829	216,278,223	121,341,485
	Extraction	2,060,040,222		306,683,628	321,714,832		
SP	Calibrated	720,762,956	664,078,365	117,843,459	85,253,100	76,877,141	52,782,909
	Extraction	712,136,239		102,232,458	78,268,816		

Source: Based on the model results.

Table 45: Results from the Extraction of Rio Grande do Sul - 1996 (in R$ thousand)							
		Y	C+I+G	X	M	X*	M*
SE	Calibrated	398,331,415	380,790,414	308,570,857	281,144,275	22,275,645	32,161,227
	Extraction	396,639,912		305,407,511	279,672,432		
S	Calibrated	128,778,590	117,529,894	89,484,093	86,598,063	13,460,142	5,097,475
	Extraction	128,539,141		88,255,576	85,608,995		
CO	Calibrated	55,833,483	68,294,202	37,034,727	49,595,460	1,107,259	1,007,244
	Extraction	56,627,370		36,963,709	48,730,556		
NE	Calibrated	93,962,783	108,335,141	40,454,056	53,427,645	3,047,391	4,446,160
	Extraction	95,104,258		40,353,496	52,185,611		
N	Calibrated	33,442,580	41,367,808	11,731,295	16,509,585	1,244,382	4,391,320
	Extraction	33,749,967		11,647,055	16,117,957		
BR	Calibrated	710,348,852	716,317,459	487,275,027	487,275,027	41,134,818	47,103,426
	Extraction	710,663,278		482,651,741	482,337,315		
SP	Calibrated	237,299,180	222,787,455	208,261,347	187,592,574	15,968,679	22,125,726
	Extraction	235,817,886		205,715,620	186,528,142		

Source: Based on the model results.

Table 46: Results from the Extraction of Rio Grande do Sul - 2002 (in R$ thousand)							
		Y	C+I+G	X	M	X*	M*
SE	Calibrated	1,190,018,421	1,097,843,991	206,830,879	156,929,885	117,183,348	74,909,911
	Extraction	1,172,154,500		173,332,948	141,295,876		
S	Calibrated	367,727,202	337,572,807	62,991,061	75,176,697	65,590,678	23,250,647
	Extraction	365,105,851		53,774,699	68,581,686		
CO	Calibrated	158,236,136	173,097,174	20,027,921	41,003,927	10,388,856	4,273,888
	Extraction	159,523,116		18,135,104	37,824,131		
NE	Calibrated	266,459,168	276,958,011	37,360,455	51,153,658	13,628,985	10,334,625
	Extraction	266,115,947		33,248,375	47,384,798		
N	Calibrated	92,630,498	94,662,706	17,365,512	20,311,662	9,486,355	8,572,414
	Extraction	92,486,475		15,566,830	18,657,002		
BR	Calibrated	2,075,071,426	1,980,134,688	344,575,829	344,575,829	216,278,223	121,341,485
	Extraction	2,055,536,303		294,849,175	314,384,298		
SP	Calibrated	720,762,956	664,078,365	117,843,459	85,253,100	76,877,141	52,782,909
	Extraction	707,954,062		94,697,407	74,915,942		

Source: Based on the model results.

Table 47: Results from the Extraction of the Federal District - 1996 (in R$ thousand)							
		Y	C+I+G	X	M	X*	M*
SE	Calibrated	398,331,415	380,790,414	308,570,857	281,144,275	22,275,645	32,161,227
	Extraction	387,478,164		297,583,445	281,010,115		
S	Calibrated	128,778,590	117,529,894	89,484,093	86,598,063	13,460,142	5,097,475
	Extraction	127,107,837		87,801,591	86,586,315		
CO	Calibrated	55,833,483	68,294,202	37,034,727	49,595,460	1,107,259	1,007,244
	Extraction	54,852,812		35,956,541	49,497,946		
NE	Calibrated	93,962,783	108,335,141	40,454,056	53,427,645	3,047,391	4,446,160
	Extraction	93,779,308		40,231,760	53,388,825		
N	Calibrated	33,442,580	41,367,808	11,731,295	16,509,585	1,244,382	4,391,320
	Extraction	33,404,405		11,682,389	16,498,854		
BR	Calibrated	710,348,852	716,317,459	487,275,027	487,275,027	41,134,818	47,103,426
	Extraction	696,622,448		473,260,519	486,986,923		
SP	Calibrated	237,299,180	222,787,455	208,261,347	187,592,574	15,968,679	22,125,726
	Extraction	229,628,618		200,525,668	187,527,457		

Source: Based on the model results.

Table 48: Results from the Extraction of the Federal District - 2002 (in R$ thousand)							
		Y	C+I+G	X	M	X*	M*
SE	Calibrated	1,190,018,421	1,097,843,991	206,830,879	156,929,885	117,183,348	74,909,911
	Extraction	1,179,487,107		194,709,303	155,339,624		
S	Calibrated	367,727,202	337,572,807	62,991,061	75,176,697	65,590,678	23,250,647
	Extraction	365,423,155		60,411,132	74,900,815		
CO	Calibrated	158,236,136	173,097,174	20,027,921	41,003,927	10,388,856	4,273,888
	Extraction	157,763,348		18,953,332	40,402,127		
NE	Calibrated	266,459,168	276,958,011	37,360,455	51,153,658	13,628,985	10,334,625
	Extraction	265,206,176		35,879,926	50,926,121		
N	Calibrated	92,630,498	94,662,706	17,365,512	20,311,662	9,486,355	8,572,414
	Extraction	92,035,558		16,627,088	20,168,177		
BR	Calibrated	2,075,071,426	1,980,134,688	344,575,829	344,575,829	216,278,223	121,341,485
	Extraction	2,059,921,390		326,606,247	341,756,283		
SP	Calibrated	720,762,956	664,078,365	117,843,459	85,253,100	76,877,141	52,782,909
	Extraction	713,310,746		109,831,983	84,693,834		

Source: Based on the model results.

Table 49: Results from the Extraction of Goiás - 1996 (in R$ thousand)							
		Y	**C+I+G**	**X**	**M**	**X***	**M***
SE	Calibrated	398,331,415	380,790,414	308,570,857	281,144,275	22,275,645	32,161,227
	Extraction	396,138,608		305,996,827	280,763,052		
S	Calibrated	128,778,590	117,529,894	89,484,093	86,598,063	13,460,142	5,097,475
	Extraction	128,372,464		88,974,346	86,494,443		
CO	Calibrated	55,833,483	68,294,202	37,034,727	49,595,460	1,107,259	1,007,244
	Extraction	56,431,107		36,581,511	48,544,620		
NE	Calibrated	93,962,783	108,335,141	40,454,056	53,427,645	3,047,391	4,446,160
	Extraction	94,207,615		40,387,210	53,115,968		
N	Calibrated	33,442,580	41,367,808	11,731,295	16,509,585	1,244,382	4,391,320
	Extraction	33,665,638		11,685,801	16,241,033		
BR	Calibrated	710,348,852	716,317,459	487,275,027	487,275,027	41,134,818	47,103,426
	Extraction	708,817,527		483,645,255	485,176,580		
SP	Calibrated	237,299,180	222,787,455	208,261,347	187,592,574	15,968,679	22,125,726
	Extraction	235,801,334		206,563,783	187,392,857		

Source: Based on the model results.

Table 50: Results from the Extraction of Goiás - 2002 (in R$ thousand)							
		Y	**C+I+G**	**X**	**M**	**X***	**M***
SE	Calibrated	1,190,018,421	1,097,843,991	206,830,879	156,929,885	117,183,348	74,909,911
	Extraction	1,177,441,404		187,052,922	149,728,946		
S	Calibrated	367,727,202	337,572,807	62,991,061	75,176,697	65,590,678	23,250,647
	Extraction	365,470,362		58,935,335	73,377,811		
CO	Calibrated	158,236,136	173,097,174	20,027,921	41,003,927	10,388,856	4,273,888
	Extraction	158,089,944		18,263,598	39,385,797		
NE	Calibrated	266,459,168	276,958,011	37,360,455	51,153,658	13,628,985	10,334,625
	Extraction	265,501,140		34,959,866	49,711,096		
N	Calibrated	92,630,498	94,662,706	17,365,512	20,311,662	9,486,355	8,572,414
	Extraction	92,582,154		16,500,284	19,494,777		
BR	Calibrated	2,075,071,426	1,980,134,688	344,575,829	344,575,829	216,278,223	121,341,485
	Extraction	2,059,120,410		315,911,913	331,862,929		
SP	Calibrated	720,762,956	664,078,365	117,843,459	85,253,100	76,877,141	52,782,909
	Extraction	712,490,860		105,369,063	81,050,801		

Source: Based on the model results.

Table 51: Results from the Extraction of Mato Grosso - 1996 (in R$ thousand)							
		Y	**C+I+G**	**X**	**M**	**X***	**M***
SE	Calibrated	398,331,415	380,790,414	308,570,857	281,144,275	22,275,645	32,161,227
	Extraction	394,548,967		304,555,656	280,911,522		
S	Calibrated	128,778,590	117,529,894	89,484,093	86,598,063	13,460,142	5,097,475
	Extraction	126,672,780		87,047,672	86,267,452		
CO	Calibrated	55,833,483	68,294,202	37,034,727	49,595,460	1,107,259	1,007,244
	Extraction	55,851,388		36,447,431	48,990,259		
NE	Calibrated	93,962,783	108,335,141	40,454,056	53,427,645	3,047,391	4,446,160
	Extraction	93,982,364		40,374,817	53,328,825		
N	Calibrated	33,442,580	41,367,808	11,731,295	16,509,585	1,244,382	4,391,320
	Extraction	33,447,390		11,480,014	16,253,493		
BR	Calibrated	710,348,852	716,317,459	487,275,027	487,275,027	41,134,818	47,103,426
	Extraction	704,503,831		479,925,450	485,770,471		
SP	Calibrated	237,299,180	222,787,455	208,261,347	187,592,574	15,968,679	22,125,726
	Extraction	234,323,947		205,131,210	187,437,670		

Source: Based on the model results.

Table 52: Results from the Extraction of Mato Grosso - 2002 (in R$ thousand)							
		Y	**C+I+G**	**X**	**M**	**X***	**M***
SE	Calibrated	1,190,018,421	1,097,843,991	206,830,879	156,929,885	117,183,348	74,909,911
	Extraction	1,182,787,432		194,880,824	152,210,820		
S	Calibrated	367,727,202	337,572,807	62,991,061	75,176,697	65,590,678	23,250,647
	Extraction	366,789,107		59,644,684	72,768,414		
CO	Calibrated	158,236,136	173,097,174	20,027,921	41,003,927	10,388,856	4,273,888
	Extraction	158,104,552		18,738,193	39,845,783		
NE	Calibrated	266,459,168	276,958,011	37,360,455	51,153,658	13,628,985	10,334,625
	Extraction	265,603,851		35,617,227	50,265,747		
N	Calibrated	92,630,498	94,662,706	17,365,512	20,311,662	9,486,355	8,572,414
	Extraction	92,736,787		16,730,707	19,570,567		
BR	Calibrated	2,075,071,426	1,980,134,688	344,575,829	344,575,829	216,278,223	121,341,485
	Extraction	2,066,037,333		325,710,080	334,744,173		
SP	Calibrated	720,762,956	664,078,365	117,843,459	85,253,100	76,877,141	52,782,909
	Extraction	715,772,692		109,734,907	82,134,812		

Source: Based on the model results.

Table 53: Results from the Extraction of Mato Grosso do Sul - 1996 (in R$ thousand)							
		Y	**C+I+G**	**X**	**M**	**X***	**M***
SE	Calibrated	398,331,415	380,790,414	308,570,857	281,144,275	22,275,645	32,161,227
	Extraction	395,982,009		305,979,333	280,902,157		
S	Calibrated	128,778,590	117,529,894	89,484,093	86,598,063	13,460,142	5,097,475
	Extraction	128,004,884		88,507,392	86,395,069		
CO	Calibrated	55,833,483	68,294,202	37,034,727	49,595,460	1,107,259	1,007,244
	Extraction	55,873,472		36,857,912	49,378,657		
NE	Calibrated	93,962,783	108,335,141	40,454,056	53,427,645	3,047,391	4,446,160
	Extraction	93,972,947		40,424,761	53,388,186		
N	Calibrated	33,442,580	41,367,808	11,731,295	16,509,585	1,244,382	4,391,320
	Extraction	33,449,781		11,686,079	16,457,167		
BR	Calibrated	710,348,852	716,317,459	487,275,027	487,275,027	41,134,818	47,103,426
	Extraction	707,283,564		483,460,310	486,525,598		
SP	Calibrated	237,299,180	222,787,455	208,261,347	187,592,574	15,968,679	22,125,726
	Extraction	235,303,474		206,067,278	187,394,212		

Source: Based on the model results.

Table 54: Results from the Extraction of Mato Grosso do Sul - 2002 (in R$ thousand)							
		Y	**C+I+G**	**X**	**M**	**X***	**M***
SE	Calibrated	1,190,018,421	1,097,843,991	206,830,879	156,929,885	117,183,348	74,909,911
	Extraction	1,184,151,954		197,521,451	153,486,925		
S	Calibrated	367,727,202	337,572,807	62,991,061	75,176,697	65,590,678	23,250,647
	Extraction	366,294,424		60,285,833	73,904,247		
CO	Calibrated	158,236,136	173,097,174	20,027,921	41,003,927	10,388,856	4,273,888
	Extraction	157,933,385		18,948,506	40,227,263		
NE	Calibrated	266,459,168	276,958,011	37,360,455	51,153,658	13,628,985	10,334,625
	Extraction	265,824,387		36,051,011	50,478,995		
N	Calibrated	92,630,498	94,662,706	17,365,512	20,311,662	9,486,355	8,572,414
	Extraction	92,471,693		16,800,214	19,905,168		
BR	Calibrated	2,075,071,426	1,980,134,688	344,575,829	344,575,829	216,278,223	121,341,485
	Extraction	2,066,683,169		329,657,479	338,045,736		
SP	Calibrated	720,762,956	664,078,365	117,843,459	85,253,100	76,877,141	52,782,909
	Extraction	716,652,900		111,146,991	82,666,689		

Source: Based on the model results.