# Tariff Series for Brazil, 1986-1999

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This report describes the construction of effective monthly and annual import tariff series for Brazilian firms between 1986 and 1999. These series are available as files

- `tariffs.csv`,

- `tariffs-outp.csv`,

- `tariffs-intm.csv`, `tariffs-intm-monthly.csv`,

- `tariffs-cap.csv`, and `tariffs-cap-monthly.csv`

at URL `http://econ.ucsd.edu/muendler/brazil`.

This report is divided into four sections, discussing the following tariff series in turn: (1) Monthly Nominal *Ad-valorem* Tariffs for Final Goods, (2) Annual Nominal *Ad-valorem* and Exchange Rate Adjusted Tariffs for Final Goods, (3) Monthly and Annual Nominal and Exchange Rate Adjusted Tariffs for Intermediate Goods Imports, and (4) Monthly and Annual Nominal and Exchange Rate Adjusted Tariffs for Capital Goods Imports.

# 1 Monthly Nominal *Ad-valorem* Tariffs

Brazil's Tariff Act underwent several changes since the late 1980s. While import tariffs were generally reduced and simplified until 1995, they were partly elevated again after 1995. Horta, Piani, and Kume (1991), Castelar Pinheiro and Bacha de Almeida (1995), Kume (1996), and Baumann, Rivero, and Zavattiero (1997) provide overviews and discussions of Brazil's foreign trade policies.

## 1.1 Use

The present monthly tariff series trace the nominal level of protection of Brazilian industry sectors in detail (53 sectors at *nível 80*). These nominal series also serve as a basis for the calculation of more elaborate effective tariff series (see following sections).

## 1.2 Period Covered

The nominal tariff series covers the period January 1986 through December 1999.

## 1.3 Data Sources

Kume, Piani, and Souza (2000) report sector-specific *ad-valorem* tariff levels. They weigh product-specific *ad-valorem* tariffs with the value added in each narrowly defined product group and arrive at sector-specific tariff levels. Their sector classification is *nível 80* (see appendix A for sector descriptions).

The data source contains 53 sectors at *nível 80*. Not all of them are industrial sectors. In fact, five agricultural sectors are included (103, 104, 105, 107, 199). In addition, four sectors related to oil and fuel production are left out (301: Oil and gas production; 1801: Motor gasoline; 1802: Fuel oil; 1806: Alcoholic fuel).[1]

## 1.4 Construction

Kume, Piani, and Souza (2000) report annual figures and provide, upon request, a series of spells at which legal changes took effect. These data points,

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[1]These sectors remain highly dominated by state-owned companies, and firm or plant level data can seldom be used due to the small number of competitors.

along with Kume, Piani, and Souza's (2000) respective (value-added weighted) tariff levels, are used to construct the monthly series for 1986-1999.

## 1.5 File Contents

The file `tariffs.csv` contains the above-mentioned monthly tariff series for the years 1986 through 1999.

**tariffs.csv (53 obs.)**

|      | Variable | Description |
|------|----------|-------------|
| 1.   | niv80    | Sector at *Nível 80*[a] |
| 2.   | jan86    | Jan-86 |
| 3.   | feb86    | Feb-86 |
| ...  |          |        |
| 169. | dec99    | Dec-99 |

[a]Observations are: 53 agricultural and industrial sectors at *nível 80*. See appendix A

In the accompanying Stata 7 file `tariffs.dta`, variable labels for the months `jan86` through `dec99` are set if and only if a tariff change occurred in that month. The variable label is empty otherwise.

# 2 Annual Nominal and Exchange-Rate Adjusted Tariffs for Outputs

The domestic sales of firms are the more protected from foreign competition the higher the nominal tariff for their sector stands. However, fluctuations in the level of the real exchange rate may counteract or re-enforce the level protection that tariffs provide. Scaling the nominal tariffs up or down by the real exchange rate yields exchange-rate adjusted series that reflect the simultaneous protection a firm receives from tariffs and the real terms of trade.

## 2.1 Use

The present series are simple annual means of the according monthly figures. They reflect the level of protection for a Brazilian firm that was equally likely to export or meet an import-competitor in any month of the year.

The level of the real exchange rate (above or below 1) crucially depends on the base month chosen for the underlying foreign and domestic price index. The base month in the present file is August 1994 which forces the real exchange rate below 1 in August 1994, while the real exchange rate attains levels above 1 before June 1994 and after January 1999. It is in the user's judgement to re-adjust the time series accordingly so that a real exchange rate of 1 is reached at other dates of his or her choice.[2]

## 2.2 Period Covered

The annual tariff and exchange-rate adjusted tariff series cover the period 1986 through 1998.

## 2.3 A Note on Brazilian Sector Classifications

The sector classification *nível 80* was implemented by the Brazilian census bureau *Fundação Instituto Brasileiro de Geografia e Estatística* (*IBGE*), Rio de Janeiro, and is applied mostly to the national accounting system. Its sibling *nível 100* was often used for firm or plant level data during most of the eighties

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[2]See also the report on "Nominal and Real Exchange Rate Series for Brazil, 1986-2001" and the file `realexch.csv` at URL `http://econ.ucsd.edu/muendler/brazil`.

and the early nineties. A new classification system *CNAE* (*Classificação Nacional de Atividades Empresariais*) has been adopted quite widely over the course of the nineties. It is internationally more comparable. *Nível 80* and *nível 100* share the same first two digits (also called *nível 50*) which permits their conversion (see appendix A). The finer definitions of *CNAE* can be directly merged to *nível 100* (see appendix C), and from there to *nível 80*.

## 2.4 Data Sources

Kume, Piani, and Souza's (2000) sector-specific monthly tariff series are applied (see section 1 above) to construct the present annual tariff series. The underlying real exchange series for the adjusted tariffs is constructed on the basis of the nominal mid-month U.S. dollar exchange rate (available from the Brazilian central bank). As industry-wide price index on the Brazilian side, *IPA-OG* (*Índice de Preços por Atacado–Oferta Global*) is used. *IPA-OG* is a wholesale price index covering the entire economy and includes imports. It is calculated by *Fundação Getúlio Vargas FGV*, Rio de Janeiro. On the U.S. side, the economy-wide producer price index, calculated by the U.S. Bureau of the Census, is applied.

## 2.5 Construction

The nominal tariffs are simple annual means of the original series. The exchange rate adjusted tariffs were constructed by first calculating a monthly series of nominal tariffs multiplied by the real exchange rate (deflator base month: August 1994). Then these monthly exchange rate adjusted tariffs were averaged to annual values.

## 2.6 File Content

The file `tariffs-outp.csv` contains the prevailing annual nominal tariffs and real exchange rate adjusted tariffs for 53 sectors of agriculture and industry (*nível 80*) for the years 1986 until 1999. The base for the underlying deflators in the real exchange rate is August 1994.

**tariffs-outp.csv (689 obs.)**

|    | Variable  | Description                  |
|----|-----------|------------------------------|
| 1. | `niv80`   | Sector at *Nível 80*[a]      |
| 2. | `year`    | Calendar Year                |
| 3. | `tariff`  | Annual Sectoral Tariff       |
| 4. | `tariffrx`| Real Exch. Weighted Tariff   |

[a]Observations are: 53 sectors at *nível 80*, repeated for the years (including some agricultural, excluding some fuel producing sectors). See appendix A

# 3 Nominal and Exchange Rate Adjusted Tariffs for Intermediate Goods Imports

While tariffs grant protection for the firms at their sales gate, high tariff levels also tend to cut firms off from internationally available inputs and intermediate goods which may not be accessible domestically. In addition, fluctuations in the level of the real exchange rate may counteract or re-enforce the level of tariffs. Scaling the nominal tariffs up or down by the real exchange rate yields exchange-rate adjusted series that reflect the simultaneous effect of nominal tariffs and the real terms of trade.

## 3.1 Use

Tariff series that properly reflect the effective rise in prices of inputs and intermediate goods can be constructed. National input-output matrices allow to derive the typical "input basket" of a firm in a given sector. The nominal tariffs or exchange rate adjusted tariffs can be weighted by this input basket, reflecting the effective price distortion tariffs create on the input side. Together with the output side tariff series (section 2), these input-side tariffs can be used to construct effective rates of protection. The series may be of interest on its own.

## 3.2 Period Covered

The intermediate-goods tariff series cover the period January 1986 through December 1998.

## 3.3 Data Sources

Kume, Piani, and Souza's (2000) sector-specific monthly tariff series are applied (see section 1 above) to construct the present series. These original series were transformed using the input-output matrices for 1985, and 1990 through 1998 as produced by *Fundação Instituto Brasileiro de Geografia e Estatística*.

## 3.4 Construction

### 3.4.1 Input-Output Matrices

The national accounting department at *IBGE* provides annual input-output matrices. Due to the change in the national accounts in 1990, time-consistent matrices are only available for the years 1990 to 1998, and for 1985 as an earlier reference year. In order to obtain input-output matrices for the entire period 1986-1998, the matrices for 1986 through 1989 can be constructed from the matrices 1985 and 1990 by linear interpolation.

Brazilian input-output matrices since 1990 are $80 \times 43$. The 80 rows represent the sectors at *nível 80* from where inputs came, and the 43 columns represent the sectors according to *nível 50* to which the inputs went.[3] For the present purpose, not quite as many rows and columns (sectors) are required. Among the 80 rows at *nível 80*, only those 53 sectors are needed that are covered by the original tariff series. Similarly, among the 43 columns at *nível 50*, only 30 correspond to industrial sectors. The reduced 53 by 30 matrix is used for the following calculations.

For the construction of input-side tariff series, only relative weights for the input-absorbing sectors are needed. The columns of the input-output matrices provide these weights. Take the input-output matrix $\mathbf{X}$ and call the entry in row $i$ and column $j$ $x_{ij}$. Then the matrix of weights $\mathbf{A}$ results by placing the entry $a_{ij} = x_{ij}/(\sum_i x_{ij})$ in cell $(ij)$. The missing input-output matrices between 1986 and 1989 can now be constructed linearly. Calling every entry in the weights matrix in 1985 $a_{ij}^{85}$ and every entry in the 1990 weights matrix $a_{ij}^{90}$, the intermediate weights for the years $t = 86, 87, 88, 89$ result as

$$a_{ij}^{t} = a_{ij}^{85} + (t - 85) \cdot \frac{a_{ij}^{90} - a_{ij}^{85}}{5}.$$

This procedure yields proper weights matrices for 1986 through 1989. Their columns sum to 1 (since $\sum_i (a_{ij}^{90} - a_{ij}^{85}) = 0$ and $\sum_i a_{ij}^{90} = 1$) and their values linearly reflect the change in the input-output structure over the five-year period.

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[3] *Nível 50* coincides with the first two digits of both *nível 80* and *nível 100*. See appendices A and C.

### 3.4.2 Input-Side Tariffs

Calling the vector of sector-specific tariffs for month $m$ in year $t$ $\tau_{output}^{m,t}$, the vector of sector-specific input price indices results as

$$\tau_{input}^{m,t} = (\mathbf{A}^t)' \tau_{output}^{m,t}.$$

Here, the tariff vectors $\tau_{output}^{m,t}$ represent 53 sectors at *nível 80*. The weights matrix $\mathbf{A}^t$ has dimensions $53 \times 30$. So, the resulting input-side tariff vector $\pi_{input}^{m,t}$ has 30 rows—representing the 30 *industrial* sectors at *nível 50*. A simple average over the months yields the according annual input-side tariff.

### 3.4.3 Exchange Rate Adjusted Tariffs

The exchange rate adjusted tariffs were constructed by first calculating a monthly series of nominal tariffs multiplied by the real exchange rate (deflator base month: August 1994). Then these monthly exchange rate adjusted tariffs were averaged to annual values.

## 3.5 File Contents

The file `tariffs-intm-monthly.csv` contains the input-side tariff series from January 1986 through December 1998. The file `tariffs-intm.csv` contains the input-side tariff series for the years 1986 through 1998. Both files includes only industrial sectors at *nível 50* (*atividade 80*). The base for the underlying deflators in the real exchange rate is August 1994.

**tariffs-intm-monthly.csv (64 obs.)**

|      | Variable | Description |
|------|----------|-------------|
| 1.   | `ativ80` | Activity 80 (*Nível 50*)[a] |
| 2.   | `niv100` | Sector at *Nível 100*[b] |
| 3.   | `jan86`  | Jan-86 |
| 4.   | `feb86`  | Feb-86 |
| ...  |          |        |
| 158. | `dec98`  | Dec-98 |

[a]Observations are: 30 activities at *nível 50*. See appendix A
[b]Observations are: 64 sectors at *nível 100*. See appendix B.
Tariff series are duplicated for respective sectors at *nível 100*.

**tariff-intm.csv (832 obs.)**

|     | Variable | Description |
|-----|----------|-------------|
| 1.  | `ativ80`  | Activity 80 (*Nível 50*)[a] |
| 2.  | `niv100`  | Sector at *Nível 100*[b] |
| 3.  | `year`    | Calendar Year |
| 4.  | `tariff`  | Annual Sectoral Tariff |
| 5.  | `tariffrx` | Real Exch. Weighted Tariff |

[a]Observations are: 30 activities at *nível 50*. See appendix A
[b]Observations are: 64 sectors at *nível 100*. See appendix B.
Tariff series are duplicated for respective sectors at *nível 100*.

# 4 Nominal and Exchange Rate Adjusted Tariffs for Capital Goods Imports

Just as high tariff levels tend to cut firms off from internationally available intermediate goods, they also make access to international capital goods harder. The higher tariffs, the more strongly firms are forced to turn to domestic sources for assets and machinery. Similarly, fluctuations in the level of the real exchange rate may counteract or re-enforce the level of tariffs. Scaling the nominal tariffs up or down by the real exchange rate yields exchange-rate adjusted series that reflect the simultaneous effect of nominal tariffs and the real terms of trade on capital goods imports.

## 4.1 Use

There are five main types of investment flows:

1. machinery,

2. vehicles,

3. computers,

4. miscellaneous investment goods, and

5. total investment flows.

Effective tariff series for these types of gross investment flows can be constructed using the mean of the tariffs concerned. By restricting attention to industrial sectors, construction services (which make part of type 5) are rightly excluded from the effective tariff series. These series indicate the degree to which access to foreign capital goods is reduced for domestic firms.

## 4.2 Period Covered

The capital-goods tariff series cover the period January 1986 through December 1998.

Table 1: PRICE INDICES FOR TYPES OF GROSS INVESTMENT FLOWS

| Type | Name | Sectors (*nível 80*)[a] |
|------|------|-------------------------|
| 1 | machinery | 701, 801, 802, 1001, 1101 |
| 2 | vehicles | 1201, 1301 |
| 3 | computers | 1101 |
| 4 | miscellaneous | 199, 401, 1401, 1501, 2205, 3201 |
| 5 | total | (capital formation weights) |

[a]For a list of sectors at *nível 80*, see appendix A.

## 4.3 Data Sources

Kume, Piani, and Souza's (2000) sector-specific monthly tariff series are applied (see section 1 above) to construct the present series. The original series were transformed using the capital formation vectors for 1985, and 1990 through 1998 as produced by *Fundação Instituto Brasileiro de Geografia e Estatística*.

## 4.4 Construction

Table 1 proposes the sectors over which the nominal tariff series can be averaged to obtain gross investment price indices (see file `tariffs-outp.csv` for nominal tariffs). Appendix A shows the according sector definitions at *nível 80*.

### 4.4.1 Specific Investment Flows (Types 1 through 4)

Unweighted means of the according sector-specific tariffs (column 3 of table 1) are taken.

### 4.4.2 Total Investment Flows (Type 5)

Brazil does not dispose of sector-specific capital formation statistics. So, no sector-specific investment-side tariffs can be constructed. However, the census bureau *IBGE* provides a "capital formation vector" for the economy as a whole. It is based on the industry classification at *nível 80* and lists the sector-specific

output used in capital formation. The (normalized) entries in this capital formation vector can serve as weights for the investment-side tariff series.

Calling the vector of nominal tariffs for month $m$ in year $t$ $\pi_{output}^{m,t}$ and calling the vector of weights, derived from the capital formation vector, $\mathbf{a}^t$, the economy-wide gross investment flow price index results as

$$\pi_{investment}^{m,t} = (\mathbf{a}^t)' \pi_{output}^{m,t},$$

a scalar. Here, the tariff vectors $\tau_{output}^{m,t}$ represent 53 sectors at *nível 80*. The weights vector $\mathbf{a}^t$ has 52 rows. A simple average over the months yields the according annual investment-side tariffs.

### 4.4.3  Exchange Rate Adjusted Tariffs

The exchange rate adjusted tariffs were constructed by first calculating a monthly series of nominal tariffs multiplied by the real exchange rate (deflator base month: August 1994). Then these monthly exchange rate adjusted tariffs were averaged to annual values.

## 4.5  File Contents

The file `tariffs-cap-monthly.csv` contains the monthly capital-good tariffs for the five groups of investment flows in table 1 (January 1986 through December 1998). The file `tariffs-cap.csv` contains the capital-good tariff series for the years 1986 through 1998. Both files includes only industrial sectors at *nível 50* (*atividade 80*). The base for the underlying deflators in the real exchange rate is August 1994.

**tariffs-cap-monthly.csv (5 obs.)**

|      | Variable | Description |
|------|----------|-------------|
| 1.   | `captype` | Type of Capital[a] |
| 2.   | `jan86` | Jan-86 |
| 3.   | `feb86` | Feb-86 |
| ...  |          |             |
| 157. | `dec98` | Dec-98 |

[a]Observations are: *computers*, *machinery*, *vehicles*, *other*, and *total*.

**tariff-cap.csv (65 obs.)**

|    | Variable | Description |
|----|----------|-------------|
| 1. | captype  | Type of Capital[a] |
| 2. | year     | Calendar Year |
| 3. | tariff   | Annual Sectoral Tariff |
| 4. | tariffrx | Real Exch. Weighted Tariff |

[a]Observations are: *computers*, *machinery*, *vehicles*, *other*, and *total*.

# Appendix: Sectors of Industry

The definition of sectors of industry according to *nível 80* or *nível 100* would roughly correspond to a three-digit *SIC* level in the US. Before gradually being substituted by *CNAE* (*Classificação Nacional de Atividades Empresariais*) during the nineties, *nível 100* was used to classify Brazilian economic activity at the micro-level. However, the national accounting system uses a classification system called *nível 80* which aggregates several manufacturing sectors in a slightly different way. Both *nível 100* and *nível 80* use a number system with four digits. The first two digits are identical in both systems (usually called *atividade 80*, *atividade 100*, or *nível 50*) and provide the simplest manner to move from *nível 100* to *nível 80*, and vice versa.

## A    English Descriptions of Sectors at *Nível 80*

A list of *IBGE*'s English descriptions of sectors at *nível 80* follows below. Sectors that are not contained in the underlying tariff series (files `tariffs.csv` and `tariffs-outp.csv`) are marked with an asterisk.

| Nív.80 | Nív.50 | English Description of Sector |
|--------|--------|-------------------------------|
| *103* | *1* | *Rice, not peeled* |
| *104* | *1* | *Wheat, not processed* |
| *105* | *1* | *Soybeans, not processed* |
| *107* | *1* | *Corn, not processed* |
| *199* | *1* | *Other agricultural products, not processed* |
| 201 | 2 | Iron ore mining |
| 202 | 2 | Mining of other metals |
| *301 | 3 | Oil and gas production |
| 302 | 3 | Coal and other mining |
| 401 | 4 | Non-metallic mineral products |
| 501 | 5 | Basic metallic products |
| 502 | 5 | Rolled steel |
| 601 | 6 | Non-ferrous metallic products |
| 701 | 7 | Other metallic products |
| 801 | 8 | Manufacturing and maintenance of machinery and equipment |

| Nív.80 | Nív.50 | English Description of Sector |
|---|---|---|
| 802 | 8 | Tractors and embankment machinery |
| 1001 | 10 | Electrical equipment |
| 1101 | 11 | Electronic equipment |
| 1201 | 12 | Automobiles, trucks, and buses |
| 1301 | 13 | Other vehicles and parts |
| 1401 | 14 | Wood and furniture |
| 1501 | 15 | Paper, pulp, and cardboard |
| 1601 | 16 | Rubber products |
| 1701 | 17 | Non-petrochemical chemical elements |
| 1702 | 17 | Alcohol |
| *1801 | 18 | Motor gasoline |
| *1802 | 18 | Fuel oil |
| 1803 | 18 | Other refinery products |
| 1804 | 18 | Basic petrochemical products |
| 1805 | 18 | Resins and fibers |
| *1806 | 18 | Alcoholic fuel |
| 1901 | 19 | Chemical fertilizers |
| 1902 | 19 | Paints, varnishes, and lacquers |
| 1903 | 19 | Other chemical products |
| 2001 | 20 | Pharmaceutical and perfumery products |
| 2101 | 21 | Plastics |
| 2201 | 22 | Natural textile fibers |
| 2202 | 22 | Natural textiles |
| 2203 | 22 | Artificial textile fibers |
| 2204 | 22 | Artificial textiles |
| 2205 | 22 | Other textile products |
| 2301 | 23 | Apparel |
| 2401 | 24 | Leather products and footwear |
| 2501 | 25 | Coffee products |
| 2601 | 26 | Processed rice |
| 2602 | 26 | Wheat flour |
| 2603 | 26 | Other processed edible products |
| 2701 | 27 | Meat |
| 2702 | 27 | Poultry |
| 2801 | 28 | Processed milk |
| 2802 | 28 | Other dairy products |
| 2901 | 29 | Sugar |

| Nív.80 | Nív.50 | English Description of Sector |
|--------|--------|------------------------------|
| 3001 | 30 | Raw vegetable oil |
| 3002 | 30 | Processed vegetable oil |
| 3101 | 31 | Animal food and other food products |
| 3102 | 31 | Beverages |
| 3201 | 32 | Miscellaneous |

Sectors marked with an asterisk are excluded from the data set.

# B  *Nível 100* definitions

| *Nível 100* | English description |
|---|---|
| **2** | **Mineral Mining (except combustibles)** |
| 210 | Metal Ore Mining |
| 220 | Nonmetallic Minerals Mining |
| **3** | **Petroleum and Gas Extraction and Coal Mining** |
| 310 | Petroleum and Gas Extraction |
| 320 | Coal Mining |
| **4** | **Nonmetallic Mineral Goods Manufacturing** |
| 410 | Cement Manufacturing |
| 420 | Cement, Concrete and Gypsum Product Manufacturing |
| 430 | Glass and Glass Product Manufacturing |
| 440 | Nonmetallic Mineral Product Manufacturing |
| **5** | **Iron and Steel Production and Processing** |
| 510 | Iron and Steel Production and Processing |
| **6** | **Nonferrous Metals Production and Processing** |
| 610 | Nonferrous Metals Production and Processing |
| **7** | **Other Metal Products Manufacturing** |
| 710 | Iron and Steel Foundries and Forgings |
| 720 | Other Metal Products Manufacturing |
| **8** | **Machinery, Equipment and Commercial Installation Manufacturing (including parts and accessories)** |
| 810 | Machinery, Equipment and Commercial Installation Manufacturing (including parts and accessories) |
| 820 | Road Construction Machinery and Tractor Manufacturing |
| **9** | **Machinery Maintenance, Repairing and Installation** |
| 910 | Machinery Maintenance, Repairing and Installation |
| **10** | **Electrical Equipment and Components Manufacturing** |
| 1010 | Electrical Products Manufacturing for Power Generation and Distribution |

| Nível 100 | English description |
|---|---|
| 1020 | Electric Conductor and Other Electrical Device Manufacturing (except for vehicles) |
| 1030 | Electric Appliance and Equipment Manufacturing (including household appliances, office machinery, parts and accessories) |
| **11** | **Electronic Equipment and Communication Apparatus Manufacturing** |
| 1110 | Electronic Components, Electronic Equipment and Communication Apparatus Manufacturing |
| 1120 | Audio and Video Equipment Manufacturing |
| **12** | **Automobile, Truck and Bus Manufacturing** |
| 1210 | Automobile, Truck and Bus Manufacturing |
| **13** | **Other Transportation Equipment and Vehicle Parts Manufacturing** |
| 1310 | Motor Vehicle Engine and Parts Manufacturing |
| 1320 | Ship and Boat Building (including repairing) |
| 1330 | Railroad Rolling Stock Manufacturing and Repairing |
| 1340 | Other Transportation Equipment Manufacturing |
| **14** | **Wood Sawing, Wood Products and Furniture Manufacturing** |
| 1410 | Wood Sawing and Wood Products Manufacturing |
| 1420 | Furniture Manufacturing |
| 1430 | Peat Production |
| **15** | **Paper Manufacturing, Publishing and Printing** |
| 1510 | Pulp and Paper Production |
| 1520 | Pulp, Paper and Paperboard Products Manufacturing |
| 1530 | Publishing and Printing |
| **16** | **Rubber Product Manufacturing** |
| 1610 | Rubber Product Manufacturing |
| **17** | **Non-petrochemical Chemical Manufacturing** |
| 1710 | Non-petrochemical Chemical Manufacturing |

| Nível 100 | English description |
|---|---|
| 1720 | Alcohol Production |
| **18** | **Petroleum Refining and Petrochemical Manufacturing** |
| 1810 | Petroleum Refining |
| 1820 | Basic and Intermediate Petrochemical Manufacturing |
| 1830 | Resins, Artificial and Synthetic Fibers and Elastomers Manufacturing |
| **19** | **Miscellaneous Chemical Products Manufacturing** |
| 1910 | Fertilizer Manufacturing |
| 1920 | Miscellaneous Chemical Product Manufacturing |
| **20** | **Pharmaceutical Products, Perfumes and Detergents Manufacturing** |
| 2010 | Pharmaceutical Manufacturing |
| 2020 | Perfumes, Detergents and Candles Manufacturing |
| **21** | **Plastics Products Manufacturing** |
| 2110 | Laminated Plastics Plate and Pipe Manufacturing |
| 2120 | Plastics Products Manufacturing |
| **22** | **Textiles Manufacturing** |
| 2210 | Natural Fabric Processing, Weaving, Knitting and Finishing |
| 2220 | Artificial and Synthetic Fabric Weaving, Knitting and Coating |
| 2230 | Other Textiles Manufacturing |
| **23** | **Apparel and Apparel Accessories Manufacturing** |
| 2310 | Apparel and Apparel Accessories Manufacturing |
| **24** | **Footwear and Leather and Hide Products Manufacturing** |
| 2410 | Leather and Hide Products and Luggage Manufacturing |
| 2420 | Footwear Manufacturing |
| **25** | **Coffee Manufacturing** |
| 2510 | Coffee Manufacturing |
| **26** | **Plant Product Processing (including tobacco)** |
| 2610 | Rice Milling and Processing |
| 2620 | Wheat Milling |

| *Nível* *100* | English description |
|---|---|
| 2630 | Fruit and Vegetable Processing and Canning (including juice and spices manufacturing) |
| 2640 | Other Grains and Seeds Milling and Plant Product Manufacturing |
| 2650 | Tobacco Product Manufacturing |
| **27** | **Slaughtering and Meat Processing** |
| 2710 | Animal (except poultry) Slaughtering and Meat Processing |
| 2720 | Poultry Slaughtering and Processing |
| **28** | **Fluid Milk and Dairy Product Manufacturing** |
| 2810 | Fluid Milk and Dairy Product Manufacturing |
| **29** | **Sugar Manufacturing** |
| 2910 | Sugar Manufacturing |
| **30** | **Seed Oil Refining and Food Fats and Oils Processing** |
| 3010 | Oilseed Milling |
| 3020 | Seed Oil Refining and Food Fats and Oils Processing |
| **31** | **Other Food and Beverage Manufacturing** |
| 3110 | Animal Feeds Manufacturing |
| 3120 | Other Food Manufacturing |
| 3130 | Beverage Manufacturing |
| **32** | **Miscellaneous Other Products Manufacturing** |
| 3210 | Miscellaneous Other Products Manufacturing |

# C  Compatibility between *Nível 100* and *CNAE*

In recent years, Brazilian production has mostly been classified according to *CNAE* (*Classificação Nacional de Atividades Empresariais*) which comes closer to the international U.N. classification. The following list shows how *CNAE* can be transformed into *nível 100* according to an internal recommendation at *IBGE*.

| Nív.100 | CNAE |
|---|---|
| 210 | 1310, 1321, 1322, 1323, 1324, 1325, 1329 |
| 220 | 1410, 1421, 1429 |
| 310 | 1110, 1120 |
| 320 | 1000 |
| 410 | 2620 |
| 420 | 2630 |
| 430 | 2611, 2612, 2619 |
| 440 | 2641, 2642, 2649, 2691, 2692, 2699 |
| 510 | 2711, 2712, 2721, 2722, 2729 |
| 610 | 2741, 2742, 2749, 2752, 2832 |
| 710 | 2751, 2831 |
| 720 | 2731, 2739, 2811, 2812, 2833, 2834, 2839, 2841, 2842, 2843, 2891, 2892, 2893, 2899 |
| 810 | 2813, 2821, 2822, 2911, 2912, 2913, 2914, 2915, 2921, 2922, 2923, 2924, 2925, 2929, 2931, 2940, 2951, 2952, 2961, 2962, 2963, 2964, 2965, 2969, 2971, 2972 |
| 820 | 2932, 2953, 2954 |
| 1010 | 3111, 3112, 3113, 3121, 3122 |
| 1020 | 3130, 3141, 3151, 3152, 3191 |
| 1030 | 2981, 2989, 3011, 3199 |

| Nív.100 | CNAE |
|---|---|
| 1110 | 3012, 3021, 3022, 3192, 3210, 3221, 3222, 3330 |
| 1120 | 3230 |
| 1210 | 3410, 3420, 3431, 3432, 3439 |
| 1310 | 3142, 3160, 3441, 3442, 3443, 3444, 3449, 3450 |
| 1320 | 3511, 3512 |
| 1330 | 3521, 3522, 3523 |
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| 1710 | 2411, 2414, 2419, 2429 |
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