
Distribution of Assets and Income in Brazil: New Evidence

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This chapter revisits the effects of Brazil's privatization program on asset and income distribution, in light of updated program information. After summarizing the current status of the program, I review and extend an earlier analysis of privatization's effects on asset distribution. Core arguments, drawn from that study, focus on a particular form of privatization—public offerings, with special conditions that allow and encourage workers to participate—which was advocated in the earlier study but adopted only after its publication.

The chapter then shifts its focus to privatization's more direct effects on income distribution, resulting from the higher prices that the former state-owned enterprises (SOEs) charged for services, following SOE auction to private entrepreneurs. The analysis relies heavily on Macedo (2003), which examined the socioeconomic policies of President Cardoso's administration (1995–2002) and made a first reference to the effects of higher prices resulting from that program on consumers. This section is followed by a discussion on the pricing policies of three industries: telecommunications, which has been totally privatized; electricity, which has been partially privatized; and oil—specifically, bottled cooking gas—which, at the wholesale stage, remains dominated by Petrobrás, a state company.

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Program Overview: Recent Developments

By international standards, Brazil's privatization program has been major in scale and scope.¹ Over the decade ending July 2001, the state auctioned off control of 119 firms and minority stakes in various other companies. The auctions produced \$67.9 billion in revenue, plus the transfer of \$18.1 billion in debt. The government also sold \$6 billion in shares of firms that remained as SOEs, obtained \$10 billion from new concessions of public services to the private sector, and sold \$1.1 billion in scattered noncontrol stakes owned by the National Social and Economic Development Bank (BNDES)—the government agency in charge of the program—in various private companies.

The program has three parts: (1) the federal National Program of "Desestatization" (NPD), initiated in 1991; (2) similar programs at the state level, which began in 1996; and (3) a special telecommunications program (referred to as the Telecom Program).² Initiated in 1997 and completed the following year, the Telecom Program is a separate federal program parallel to the NPD. Its auctions, heavily concentrated in 1997 and 1998, produced \$28.8 billion in revenues, plus \$2.1 billion in debt transfers. The NPD produced \$28.2 billion in revenues, plus \$9.2 billion in debt transfers; while state-level programs produced revenues of \$27.9 billion, and \$6.8 billion in debt transfers.³

After 1998, the privatization program virtually stalled. According to BNDES, proceeds from the auctions, including new concessions of public services, which had risen from \$26.3 billion in 1997 and peaked at \$35.7 billion in 1998, subsequently fell to \$4.2 billion in 1999. Proceeds then climbed to \$10.2 billion in 2000 (sale of a major state bank, Banespa, long in the pipeline, accounted for \$3.6 billion of that total), fell to \$2.8 billion in 2001, and declined further to \$2.2 billion in 2002.

Earlier studies of Brazilian privatization focused primarily on efficiency changes in companies that underwent the process. Two major studies concluded that performance of the former SOEs, as measured by various indicators, improved after privatization. Pinheiro (1996), then at the BNDES, analyzed the performance of 50 firms before and after privatization, using data until 1994; he concluded that "in general, the obtained results confirm that privatization brings a significant improvement . . . of the performance of the firms." Anuatti-Neto et al. (2003) analyzed a data set covering 66 privatization contracts, corresponding to 102 firms and 94 percent of the total value of the auctions until July 2001. Performance of these firms was

1. This section draws heavily on my contribution to Anuatti-Neto et al. (2003).

2. Until July 2001, program composition (total value of the auctions), by industry, was: electricity (31 percent), telecommunications (31 percent), steel (8 percent), mining (8 percent), oil and gas (7 percent), petrochemicals (7 percent), financials (6 percent), and others (2 percent).

3. These values exclude concessions of public services.

reviewed before and after privatization until 2000, comparing performance of the privatized firms to those observed in the private sector over the years.

In addition to the improved-efficiency finding, Anuatti-Neto et al. (2003) identified sources of the gains privatized firms made, in the form of reduced direct employment and more rewarding prices. Moreover, drawing from Macedo (2000), they showed macroeconomic costs; that is, the benefits of privatization could have been higher had the government not used the money to sustain its misguided policy of enlarging fiscal deficits and adding to them by adopting high interest rates to defend the currency, the Brazilian real, from 1995 to 1999. Macedo pointed out that resources from privatization made the government's budget constraint softer, making room for additional debt. Moreover, the foreign investment that privatization attracted and the high interest rates helped to postpone devaluation by softening the external debt constraint. High interest rates, large public deficits, and an overvalued currency had the combined effect of seriously enlarging both the public and external debt. This effect, in turn, severely increased the vulnerability—both domestic and external—of the Brazilian economy and aggravated problems that became entrenched by the late 1990s.

Regarding capital markets, Anuatti-Neto et al. (2003) pointed out that privatization also entailed the cost of reducing minority-shareholder rights, thereby hampering the development of such markets. Drawing from Macedo (2000), Anuatti-Neto et al. showed that the benefits of privatization could have been higher had the government not neglected the opportunity to democratize capital ownership.

Accounting for Public Opposition

Privatization is unpopular in Brazil. A Latinbarometer public-opinion survey conducted in 2001 in 16 Latin American countries reported that 53 percent of respondents in Brazil believed that privatization had not benefited the country (Lora and Panizza 2002). Nonetheless, the Brazilian public's attitude toward privatization is more favorable than that of populations in neighboring countries: On average, 63 percent of respondents in all the countries surveyed believed that privatization had not benefited their nations. The only other countries whose public opinion of privatization was less negative than Brazil were Chile (47 percent) and Venezuela (46 percent). For all other surveyed countries, the percentage of negative opinions was higher.⁴

Various reasons account for weak popular support of reform in Brazil. First, the average citizen is rarely in a position to calculate and fully identify the benefits of privatization, as described by Pinheiro (1996) and Anuatti-Neto et al. (2003). Since the end of the Second World War, when

4. The other countries surveyed were Argentina, Bolivia, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Paraguay, Peru, and Uruguay.

nonbanking SOEs were created, the belief has been that the state should play a major role in large strategic industries, such as steel and mining. The detailed functioning of such industries is far from the pressing concerns of most people; thus, it is unreasonable to expect the average citizen to be concerned with the outcome or be positioned to evaluate the technicalities of privatizing such industries.

Second, developments following total privatization of the telecommunications industry and partial divestiture of the electricity SOEs contributed to a negative popular attitude. Higher tariffs partially blurred the favorable effects of a major expansion of telecommunications services. A further negative effect emerged in 2001, when the country was forced to ration electricity due to drought (which resulted in lower reservoir levels at hydroelectric plants), coupled with remaining SOEs' mishandling of planned investments in generation capacity and transmission lines to consumption centers. Opponents of privatization were eager to blame privatization for the crisis, overlooking that the shortage came at the generation stage, which remains largely under government control.

Third, privatization coincided with sluggish overall economic growth, particularly after the program peaked in 1997–98. Therefore, dissatisfaction with lower economic gains or even losses, such as those that emerged with higher rates of unemployment, were likely to have promoted criticism of government policies generally and privatization in particular.

Fourth, as highlighted above, the government failed to use the privatization program to democratize capital ownership. Only recently has it resorted to successful public offerings, in which workers are entitled and empowered to participate. Thus, as a rule, the average citizen has been distanced from the privatization process and its benefits (rewards to controllers and shareholders of privatized firms).

A fifth reason for opposing the program was its unfavorable portrayal by the media, whose coverage of court battles disrupted auctions, sometimes necessitating police intervention. Press coverage of telecommunications privatization was particularly negative, as it was accompanied by news that certain government authorities had coerced groups to participate in the auctions. Recorded tapes of government authorities' conversations with each other and interested parties reached the press and subsequently raised suspicions. Even though the legal battles decided in favor of privatization, the public uproar was serious enough to cause the minister of communications to resign in late 1998.

Other Viewpoints and Factors

Despite the program's unpopularity, a study by Lamounier and De Souza (2002) depicts another view, focusing only on the opinions of a group called the Brazilian elites. This group is composed of 500 businesspeople (including

leaders of associations of small- and medium-sized firms), union leaders, congress members, high-echelon members of the executive and judiciary branches of government, journalists, religious leaders, directors of non-governmental organizations, and intellectuals. On average, 62 percent responded that they approved or tended to approve of privatization. The rates varied from a high of 87 percent for members of the executive branch of government to a low of 13 percent for union leaders (the only rate below 45 percent). Another question concerned company performance after privatization. In this case, the approval rating showed large variations by industry.⁵

Several other factors explain the current status of privatization. First, advancing it further will affect those SOEs that have stronger political support than the ones privatized thus far. For example, the remaining SOEs in the banking sector includes the nearly two-century-old Banco do Brasil, a commercial bank of which the federal government is the controlling shareholder. This bank holds the government's accounts and is the major actor in federally subsidized, agricultural credit. It has built a major constituency, as private banks have long refrained from extending agricultural credit. Staff of the Banco do Brasil, traditionally selected by public examination, is a source of high-level government officers. Some have reached ministerial level or have become congress members; they are influential and tend to disapprove of changes in the bank's status. Moreover, the bank is not entirely an SOE, as it has private shareholders who also act as a group to maintain its privileged status.

Petrobrás, the oil industry giant, remains in state hands. Established in 1954, following a strong nationalist stand against foreign oil companies, the company has been effective in finding oil. In the 1980s, it began offshore drilling and has set worldwide records in deepwater exploitation. Domestic production currently meets about 90 percent of the country's needs, which is viewed as a sign of success. Until 1995, Petrobrás had a monopoly of the upstream market in prospecting, production, and importing. Despite a theoretical opening of the market in 1995, the company effectively continues to have a virtual monopoly on these activities, as well as refining. As oil is associated with national security issues, the military views keeping Petrobrás under government control as crucial. Again, the company has private shareholders who strongly support its present profitable and protected status.

In the electricity industry, privatization occurred mainly in distribution, while the generation segment remains mostly under federal control. After

5. The highest industry ratings went to aviation (80 percent), in which Embraer, the former SOE, has been successful; steel (65 percent); and telecommunications (58 percent). The lowest ratings went to railroads (9 percent), airlines (11 percent) (in this case, a single, small company owned by the state of São Paulo was individually privatized in the mid-1980s); and electricity (13 percent).

the 2001 rationing, the process of restructuring stalled. Rationing stimulated industry and households to adopt energy-saving measures; in the aftermath, demand has not recovered to its previous levels. Both rationing and demand reduction brought losses to the industry, worsening the situation of heavily indebted—largely in dollars, which have appreciated since 1999—privatized companies. With both distribution and generation companies currently suffering enormous losses, the federal government, which regulates the entire industry, is presently preparing a new sector arrangement. A pressing concern is that BNDES must find a way to manage the sector's enormous debts, some of which are on their way to default. Thus, electricity is an industry in disarray, presently unattractive to private investors; before any discussion of a new round of privatization can occur, policy and financial reorganization are required.

Despite these shortcomings, reversing privatization is highly unlikely in the foreseeable future. The Workers' Party, whose leader was inaugurated as president in 2003, fought privatization in congress and the courts during the 1990s; however, after moving into government, it has adopted conservative fiscal and monetary policies and has avoided condemning privatization. Given Brazil's financial realities, I see no room for a privatization reversal (the government has not suggested a reversal, even in theory). The government is likely to keep the program stalled—that is, no renationalizations or reversals will occur, but no further advances will be made.⁶

Asset Distribution

Studies on income distribution in Brazil abound, as the country represents one of the world's worst cases of inequality.⁷ According to 1999 data from the Brazilian Census Bureau (IBGE), the income share of the poorest 50 percent was only 13 percent, while the wealthiest 10 percent took a hefty 48 percent of total income, a picture that has changed little over time.⁸ Since measurement began in the 1960s, the Gini coefficient of income inequality has remained almost constant, fluctuating close to 0.60. (Most analyses of income inequality in Brazil focus on such measures as the Gini coefficient.) After examining minor changes in measurement over time, analysts proceed to investigate the causes in terms of flow variables, such as wage policies in the 1960s or recent increases in cash transfers from the government

6. Some reversal, however, might occur, not as a result of policy change, but because of certain privatized firms having defaulted debts owed to BNDES who risk takeover by a state-owned creditor (as happened in Chile in the early 1980s).

7. This section draws on Macedo (2000) and updates of that analysis.

8. For historical data, see www.ipeadata.gov.br.

to the poorest groups. Most studies ignore or take for granted stock or wealth variables, such as asset distribution, which contribute to the high degree of income inequality.

Against this background, together with a few other Brazilian economists (particularly Paulo Rabello de Castro of the Getúlio Vargas Foundation, Rio de Janeiro), I view privatization in Brazil as an opportunity for democratizing capital ownership, changing the heavily concentrated nature of capitalism, and opening room for improving income distribution at its roots.

Change of Direction: Public Offerings

For the reasons explained below, the government long neglected this course of action. Only after the privatization program had made major advances did the government decide to move in this direction. Thus, in 2000 and 2001, instead of auctioning major blocks of equity capital in the former SOEs through tenders, the government resorted to public offering of minority stakes of shares it had kept of Companhia Vale do Rio do Doce (CVRD), privatized in 1997, and of Petrobrás (which remains under federal control but with minority private shareholders). In these public offerings, workers in the formal labor markets were also entitled and empowered to participate, using the money they had accumulated in their Workers' Tenure Guarantee Fund (FGTS), a compulsory savings program (an individual account adds one month's salary each year).⁹

In this way, any worker with a positive FGTS account balance was entitled to participate in public offerings by converting a portion of his or her money into quotas of stock funds created specifically for this purpose and managed by banks the worker chose. In the case of Petrobrás, the maximum exchange allowed was 50 percent of the FGTS account balance. In the case of CVRD, this percentage was reduced in practice, as there was excess demand for the shares. For offers made by FGTS participants, funds were exchanged on a pro-rata basis.

Advocates of democratic capital ownership had long suggested this process. Use of FGTS deposits to purchase shares being privatized was exceptional since, as a rule, the money could be withdrawn only if the labor contract was broken, the money was used to buy a house, or upon retirement. In essence, FGTS is a funded form of unemployment compensation or social security, organized as personal accounts in the name of the beneficiaries. The accounts are kept by the National Savings Bank (CEF), a major banking-sector SOE.

9. Workers in the informal labor market do not participate in the FGTS program, as they do not have a formal labor contract. A major segment of government's civil service and military personnel are also not enrolled in FGTS, as they are subject to statutory regimes that generally guarantee job tenure.

Why Didn't the Government Democratize Capital Ownership Earlier?

To understand why the government previously neglected the option of democratizing capital ownership, it is necessary to understand certain aspects of the Brazilian privatization program's legal framework.

Legal Framework

Law 8031, of April 12, 1990, established the legal framework of the Brazilian privatization program.¹⁰ The first article set forth six objectives: (1) reestablish the state's strategic position in the economy by transferring to the private sector activities unduly undertaken by the public sector; (2) contribute to the reduction of public debt, thereby helping to adjust public-sector finances; (3) make room for increased investment in companies and activities transferred to the private sector; (4) contribute to modernization of the country's industrial sector by improving its competitiveness and strengthening entrepreneurial skills in various sectors of the economy; (5) allow public administration to concentrate its efforts on activities in which presence of the state is fundamental to accomplishing national priorities; and (6) contribute to strengthening capital markets by increasing the supply of securities and democratizing capital ownership of the SOEs included in the program.

Thus, although not explicitly concerned with income distribution, the program formally adopted the idea of democratizing capital ownership. However, in putting the process into practice, the Brazilian government (like many other governments around the world) opted to emphasize the financial resources and revenues it could generate from sales. Thus, the government decided to auction its shares of the SOEs to obtain the highest value after establishing minimum prices as evaluated by outside consultants. In this way, until the aforementioned moved into public offering in 2000, the auctions attracted only large businesses and investors, both national and foreign.

Macedo (2000) argued that privatization is not merely an exchange of assets. A major aspect of its relation to asset and income distribution is that buyers of previously state-owned firms believe they will be better able to manage the companies and that their superior effort, skills, and incentives will allow them to obtain a higher return than that of less competent or motivated government managers. They believe they can overcome or avoid the effects of past government policies, such as wage and price policies, which precluded government managers from performing well. Experience in Brazil and elsewhere generally indicates that these expectations are correct.

10. Law 9491, of September 9, 1997, is the most recent version.

Thus, with the sale of an SOE comes the opportunity to improve efficiency and profitability. By having relied exclusively on auctions of controlling blocks of its former SOEs, the government had generally excluded small investors from participating in the process. In my view, shifting to public offerings, along with the entitlement and empowerment of specific groups of small, often first-time, investors, better facilitates the democratization of capital and creates a more positive income-distribution effect.

Asset Ownership: Rewards and Risks

The proponents of broadening asset ownership have also suggested a more daring course of action—that is, using pension liabilities that the government owes present and future pensioners to purchase shares. In this scheme, citizens could use all or part of the present value of their future payments to participate in public offerings. Underlying this idea is the fact that the government-sponsored social security systems are largely deficient, with no solution in sight. Thus, this scheme would be tantamount to reducing public deficits and debt, while, at the same time, handing over a potentially valuable asset to citizens. It might also serve to help capitalize a new public-pension system (as did Bolivian privatization). Certainly, the present pension system is in great need of reform, as it has adopted the traditional pay-as-you-go model, together with such indigenous schemes as receive-more-than-you-pay and receive even-if-you-don't-pay.

The concept of broadening asset ownership, however, has not yet gained a wide audience in the country. Thus far, it has neither major political nor public support, except in the recent, limited cases of CVRD and Petrobrás. The chief concern of the economic teams of administrations (Collor, Franco, and Cardoso) that have pushed the privatization process consistently has been to raise local and foreign money from privatization to alleviate the fiscal crisis and finance the balance of payments.

In the past, the Workers' Party preferred to fight privatization in congress and the courts and by various other public means. Now in power, the Workers' Party has revised its previous beliefs, moving ideologically closer to the social-democratic mainstream. Democratizing capital ownership is typically a social-democratic idea. Indeed, during the Cardoso administration (1995–2002), when the privatization program was at its height, the social democrats in power could have used the law stating this objective. As noted, the law was not put into practice until 2000, when it was applied in two minor cases; nevertheless, these could have set a new pattern for future privatizations.

Clearly, taking this alternative course of action would bring its own difficulties. In particular, one could not guarantee that workers would adhere en masse to schemes that might be more financially rewarding than the FGTS deposits or the assurance of a public pension; it could also lead to

losses: Definite risks are involved, and poorer people tend to be more risk averse. In this respect, the government was wise to allow only a partial exchange of FGTS deposits for shares, which encourages a more balanced portfolio of financial assets in terms of risk.¹¹ It has also been suggested that the equity received from the government should go into private funds to gain from efficient management, a procedure that was followed in the CVRD and Petrobrás cases, with FGTS monies going into specific funds created for this purpose. Further, there is the question of program scale: Some have recommended joint ventures of funds, with foreign and local traditional investors sharing in the companies and their management.

That the privatization program has stalled should not discourage those in favor of broadening asset ownership, because the case for this type of privatization is defensible. I am convinced that, unless bold actions are taken with respect to asset distribution in Brazil, the country's highly concentrated income distribution will not move in a favorable direction. Thus, this alternative course of action should be assigned a larger role in future privatizations. At some point, this form of privatization might become attractive to the Workers' Party, making it willing to enter into a new round of public offerings with strong participation of its major constituency, labor.

In this respect, it is important to review the experiences of cases in which privatization has been adopted on a small scale: Petrobrás (2001) and CVRD (2002). The funds that emerged from those public offerings are known as CVRD-FGTS and Petrobrás-FGTS, and their prices shift on a daily basis, like any other stock market fund. A daily newspaper that follows the Bovespa (São Paulo Stock Exchange), list 36 CVRD-FGTS and 52 Petrobras-FGTS funds.¹²

As the results in table 7.1 show, the two cases added hundreds of thousands of new shareholders to the companies. Success of the first case increased the demand for the second, which was almost twice as high. When one compares the return (to date) on investment made in those companies' shares with the one that would have been received had the money remained in the traditional FGTS account, the difference in favor of the former is enormous.

Effects on Pricing

Privatization also affects income distribution through its effect on the pricing of goods and services that privatized companies offer. Charging real-

11. Workers were advised of the higher risks of their investment in stocks, including lack of government guarantees, unlike their FGTS accounts. It should be noted that workers have been losing money in traditional FGTS accounts, after accounting for inflation. Renato Fragelli of the Getúlio Vargas Foundation, who calculated the returns of FGTS deposits from January 1999 to July 2003, found they lagged a national cost-of-living index for the same period, according to *O Estado de S. Paulo* (September 11, 2003).

12. *Valor Econômico*, September 19, 2003, C4.

Table 7.1 Brazil: Results of public offerings, with participation of FGTS depositors

Company	Percent capital share	Transaction date	Number of FGTS depositors	Percent return on investment (until stated date)	Percent return of FGTS (over the same period)
Petrobrás	n.a.	August 2000	312,194	76 (until May 2003)	28 ^a or 18 ^b
CVRD	4.6	March 2002	584,588	89 (until December 2002)	7 ^a or 5 ^{b,c}
				114 (until September 2003) ^c	16 ^a or 11 ^{b,c}

n.a. = not available

FGTS = Spanish acronym for Workers' Tenure Guarantee Fund.

a. For participants enrolled until September 1971.

b. For participants enrolled thereafter.

c. Author's estimates.

Sources: *Petrobrás em Ações* (2003, 4); *CVRD 2002 Report*, www.cvr.com.br (for returns until December 2002 and author's estimates thereafter).

istic prices is part of privatization's rationale, as it seeks to make companies more efficient and overcome past effects of government's unrealistic pricing. Realistic prices can, however, create an additional burden for consumers, particularly low-income ones, pointing to the need for public policies to alleviate this burden. Another key issue is defining the term *realistic price* because regulatory agencies can err when establishing criteria for initial prices and their adjustments. The latter are particularly relevant in an economy such as Brazil's, where inflation rates are still higher than those observed in developed countries.

Macedo (2003) made a first incursion into this issue, showing that, after privatization, several public-service tariffs had increased more than a general index of the cost of living during the Cardoso administration (1995–2002), when the privatization program made great strides.

In the three industries examined—telecommunications (totally privatized), electricity (partially privatized) and oil, specifically bottled cooking gas (dominated by Petrobrás through the refining stage)—I found distortions whereby consumers pay higher prices for goods and services for no justifiable economic reason. Moreover, even without such distortions, the new price reality imposes an additional burden on consumers, which specific strategies aimed at alleviating its effect on the poor should address.

That price distortions were found in totally privatized, partially privatized, and state-controlled sectors suggests that price distortions do not result from privatization per se, but from pricing policies that Brazilian regulatory agencies have adopted. Moreover, tax rates in these three industries are high; only in such exceptional cases as electricity are taxes lower for the poorest groups, although with distortions in their targeting. Thus,

Table 7.2 Brazil: Cost of living changes in city of São Paulo, by expenditure type, July 1994 to August 2003 (percent)

Expenditure type	Total change	January 2000– August 2003	September 2002– August 2003
Telephone services			
Access to fixed line	–98	–84	13
Services: fixed lines	592	67	15
Services: mobile phones	n.a.	36	13
Electricity	209	76	16
Cooking gas ^a	468	97	16
Total cost of living	133	30	13

n.a. = not available, as services were just starting in 1994 and included in the index only later.

a. Bottles of liquefied petroleum gas (LPG).

Source: Consumer price index as published monthly by Brazilian Portuguese Fundação Instituto de Pesquisas Econômicas (São Paulo).

there is room for additional tax cuts along the same lines, as well as improvement in the targeting mechanisms.

Table 7.2, which provides an overview of the changes in costs of telephone services, electricity, and cooking gas, shows the increase in the cost-of-living index for São Paulo during 1994–2003. The total change in cost of living is presented, together with changes for the three reviewed items in household budgets. In addition, more recent changes (from January 2000 to August 2003 and September 2002 to August 2003) are isolated.

Except for access to fixed phone lines, whose price decreases are explained below, the other items increased more than the general cost of living (although not for the last 12 months in which the various rates show only minor differences). However, in relation to this last period, cooking gas prices had already increased sharply, causing protests from consumers and politicians. In the case of telephones, a tariff adjustment is due, pending a court ruling. A new annual readjustment became effective for electricity in January 2004.

In addition to the poverty faced by a great portion of the population, difficulties to consumers generally, brought about by cost-of-living increases (table 7.2), are compounded by a decline in real earnings, which have shrunk family budgets. Starting in the 1980s, the economy grew slowly, at approximately 2 percent annually. More recently, after the exceptional growth of 4.4 percent in 2000, the growth rate declined to 1.5 percent in 2001 and 2002 and to 0.5 percent in 2003.

Weak economic growth brought increased unemployment. Under such conditions, workers faced mounting pressures to preserve the purchasing power of their earnings when negotiating annual wage readjustments due to cost-of-living increases, as shown in table 7.3 (São Paulo is used because it is the most important state in terms of population and GDP).

**Table 7.3 Brazil, state of São Paulo:
Survey of collective
readjustments obtained
by unions compared
with cost of living measured
by INPC (percent)**

Nature of readjustment	Year (first semester) ^a	
	2002	2003
Above INPC	32.2	12.5
Equal to INPC	26.6	22.5
Below INPC	41.2	65.0

INPC = Brazil's consumer price index

a. a semester represents 6 months.

Source: Interunion Department for Statistics and Socio-economic Studies (DIEESE) (2003); *Valor Econômico*, July 16, A1-2.

This issue raises further concern for the damaging effects of increased costs revealed by table 7.2. While I acknowledge that certain prices before privatization were set at unrealistically low levels, I am also convinced that part of the postprivatization increases were not based on reasonable calculations—rather, they arose from distortions that government policymakers should address, particularly in the areas of regulation and social policy.

Following the total privatization of telephone services and partial privatization of electricity services, and even earlier, as state companies were being prepared for sale, more realistic tariffs were adopted, and regulatory agencies were created in these industries. Deregulation of the oil sector legally eliminated Petrobrás monopolies and, in principle, opened the door for industry competition. However, the company still retains a virtual monopoly of the market, as strong competitors have not yet come into action.

With the memory of inflation still prevalent, most public tariffs have been linked to price indices to avoid private-investor uncertainty, which could discourage participation in privatization auctions. In the process, a major distortion in telephone and electricity tariffs has arisen, as a result of contaminating the price indices adopted in these cases by dollar-linked prices, such as those of tradable commodities. These are applied to index tariffs of services whose costs are not necessarily determined by dollar-pegged prices, making the distortion particularly relevant after 1999 because of the various devaluations of the Brazilian currency (real) since then.

Telephone Services

The telephone industry, considered the most successful example of service expansion following privatization, had suffered from chronic shortage of

Table 7.4 Brazil: Telephone services, 1998 and 2002 (millions of units)

Year	Fixed lines in service			
	Home	Business	Mobile	Public
1998	14.5	4.8	5.2	0.6
2002	29.4	8.4	33.4	1.3

Source: National Telecommunications Agency (ANATEL), courtesy of Ethevald Siqueira.

supply before its sale. Phone lines had been offered through a limited self-financing system, in which future customers registered by buying stocks for about R\$1,200 (roughly US\$400). A secondary market for phone lines also had existed, with transactions that sometimes reached more than US\$3,000 or more per line. Before privatization, state-owned companies also had begun to offer mobile phones, but in limited quantities due to scarce resources to expand supply.

Table 7.4 shows that the number of fixed personal lines roughly doubled from 1998 to 2002 period, as did the number of public phones. The number of mobile phones skyrocketed, as a result of large private-sector investments. The National Telecommunications Agency (ANATEL), the regulatory agency, estimates that investments between 1998 and 2002 totaled R\$73 billion (about US\$24 billion).¹³

In addition, the expansion virtually eliminated the cost of buying a fixed line through acquisition of company stocks or resorting to the parallel market (table 7.2).¹⁴ Expansion also reached lower-income families to a greater extent. However, as table 7.5 shows, distribution of fixed telephone lines remains unequal among income classes, as lower-income groups still have relatively limited access, compared to higher-income groups.

The relation between phone service providers and consumers involves issues of access and phone line use. Table 7.3 shows the larger number of installed fixed lines; however, other data demonstrate that an impressive number of lines have been disconnected due to nonpayment of bills. According to ANATEL, by December 2002, disconnected phone lines totaled 5.97 million, with 5.4 million available for installation.

Several factors explain the large number of disconnected lines. The first is low levels of household income and the difficulties families face in maintaining purchasing power of earnings (table 7.3). The second is high ser-

13. According to *O Estado de S. Paulo*, August 18, 2003, B5.

14. The 98 percent reduction from July 1994 to August 2003 represents close to total elimination; as a result, the increase shown in the last column (13 percent) of table 7.2 was on top of minor installation charges.

Table 7.5 Brazil: Fixed and mobile telephone services by family income groups, 1998 and 2002^a

Income class in minimum wages per month	Percent of families, 2002	Percent with fixed lines		Percent distribution of mobile telephones	
		1998	2002	1998	2002
Up to 2	n.a.	0	9	0	3
4 to 6	45 ^b	1	51	1	10
6 to 15	31	25	87	6	19
15 to 30	19	77	99	31	31
30 and up	5	91	99	62	37

n.a. = Data not available for this income class alone.

a. As of July 29, 1998 and December 31, 2002.

b. Includes previous class.

Source: National Telecommunications Agency (ANATEL).

vice tariffs, particularly for fixed lines. For a household, these tariffs have two components: a fixed subscription cost and a variable cost, which depends on telephone use. In addition, the private provider has an incentive to cut off service to nonpayers. In the past, this was not a serious issue, as services were more limited, particularly in their coverage of poorest groups.

Postprivatization tariffs increased to levels viewed as realistic to attract investors. The regulatory regime allows for periodic adjustments as warranted by the General Price Index-Internal Availability Criterion, known as the IGP-DI, calculated by the Fundacao Getulio Vargas. (An IGP variant is the IGPM, which was adopted as a standard for variations in certain electricity contracts.) These IGP variants differ according to the period in which the index is calculated, but they use the same price changes as their basis. In any case, I argue that this index presents a series of detrimental distortions for consumers.

Created in 1947, the IGP has never changed its structure. Wholesale prices represent 60 percent of the calculation, consumer prices 30 percent, and civil construction costs 10 percent. When it was created, the IGP had a pragmatic objective: to estimate the overall rate of inflation before calculating the nominal GDP deflator based on the national accounts.

Focusing now only on recent developments, since the adoption of a floating exchange rate system in 1999, the Brazilian real underwent three major rounds of devaluation, which led to sharp increases in wholesale prices, particularly for tradable commodities, such as soybeans and steel. As a result, the IGP became detached from consumer price indices, thereby revealing its bias toward dollar-linked prices. For example, over the 12-month period ending December 2002, the IGP-DI increased by 26.4 percent, while IPCA, a national consumer price index produced by IBGE, increased 12.5 percent, less than half as much.

The IGP is also subject to other criticisms, including that certain wholesale prices are collected from price lists, which are not used in transactions. Another criticism is that a general price index should have a formula based on the structural composition of the economy's GDP, in which the industry represents 36 percent, agriculture 8 percent, and services 56 percent. These would be only technicalities if not for the fact that the IGP used to index the telephone and other tariffs for public services, thus contributing to the picture revealed in table 7.2.

Many in Brazil perceive the need to adjust the IGP or remove its distortions; however, since the 1973 inflation episode, it has been taboo to criticize price indices in the country. At that time, under a military regime, the anti-inflationary policy also controlled the price indices, and the government pressured institutions that produced them to underestimate rates. Thus, some continue to view criticisms of the IGP as smacking of this older attitude, even when they aim to point out clear distortions in its measurement.

In short, the resulting dilemma is that legislation imposes use of a distorted index. The institution that produces it does not fix it, and the government, afraid of being misinterpreted, is paralyzed. In turn, the consumer ends up paying the bill.

These distortions became more evident with the last tariff adjustment that ANATEL authorized in July 2003, with rate increases ranging from 24.6 percent to 41.74 percent, depending on the service. For example, the minimal commercial tariff had the higher rate, while the residential tariff had the lowest.¹⁵ Given the difference in relation to the consumer price indices, public opinion, consumer protection agencies, and many politicians (including the Minister of Communications) strongly opposed the rise in tariffs. Some entities filed lawsuits, which led to court decisions to suspend the increase temporarily, only authorizing a variation following the IPCA of IBGE. A final court ruling is pending.

One idea gaining ground within government circles is the adoption of indices that specifically measure the evolution of costs by industry, after 2006, when the contract rules will be reexamined. However, no proposal has been made to compensate consumers for the distortions that are leading to excessively high rates (although there may be a court ruling or a renegotiation of contracts induced by the uproar caused by the higher tariffs).

Another issue is the comparatively high price of fixed telephone services, which (along with convenience of usage) has led to a strong increase in mobile phone use (table 7.4). The fixed-telephone subscription tariff, the basic tariff for services, is high, particularly for poorer families. At R\$32 (about US\$10) per month, in the case of residential service, it represents approximately 13 percent of a minimum monthly wage. Thus, many consumers have begun to opt for the mobile phone, particularly in its prepaid

15. According to *O Estado de S. Paulo*, July 12, 2003, B1.

calling card form, which has no minimum tariff and eases consumer management of cost. Mobile phones of this sort are often sold at reduced prices (R\$200 or US\$66, in 10 monthly installments, for example). Many consumers also content themselves with using the mobile phone to receive calls only, as no tariffs are charged in this case.

This alternative facilitates phone access and use, but raises the overall cost of service because tariffs for mobile calls are more expensive on a used-time basis. An additional dilemma is that fixed phone companies do not want to reduce the basic subscription tariff on fixed lines to facilitate access, while mobile phone companies facilitate access, as well as use, but charge higher tariffs. The convenience and the status of owning a mobile phone also influences individual choice, but does not necessarily take the family's interest into account. This issue remains unresolved.

A parallel issue is that Internet access in Brazil, available almost entirely through fixed telephone lines, excludes many poor families. The price of a computer is also an obstacle; however, a large second-hand market has affordable prices (sometimes only US\$100–\$150). More affordable prices increase access to the machine, but not to Internet use, which is precluded by the need for affordable access to telephone lines.

Electricity Services

Electricity tariffs are set according to more complex criteria than those used in the telecommunications sector because the electricity sector's structure includes both generators—95 percent of which are hydroelectric power plants—and distributors.¹⁶ Thus, the sector requires rules to guide relations between these two components, and between distributors and consumers. Privatization occurred mainly among distributors and some generators, although the largest ones (Furnas, Chesf, Eletronorte, and Itaipu) remain in federal hands. Moreover, a considerable portion of energy is imported from a joint venture with Paraguay, through the Itaipu hydroelectric plant.¹⁷ There is also a short-term exchange market, Wholesale Electricity Market, known as the MAE.

Regarding generation, the cost of electricity is roughly determined by combining the following supply sources: Itaipu (30 percent), with the dollar as the reference; contracts between generators and distributors (30 percent), with the IGPM (30 percent) as the reference; bilateral contracts using MAE prices as the reference (15 percent); and the distributors' own generating

16. I thank Francisco Anuatti-Neto for his guidance in this chapter section.

17. Itaipu is the world's largest hydroelectric plant (although it will lose its title to China's Three Gorges, currently under construction). Itaipu produces 30 percent of all energy consumed in Brazil (a minor portion comes from Argentina).

Table 7.6 Brazil, state of São Paulo: Low-income urban electricity consumption compared to standard rate, 2003 (Brazilian real)

Standard rate	Low-income rate ^a	Consumption level (kWh)
0.027521	0.009362	Up to 30
Flat rate	0.016047	31 to 100
	0.024073	101 to 200
	0.026745	201 and above

a. Mandated by ANEL by range of residential monthly consumption.

Source: ANEL and Bandeirantes Electricity Company.

power (25 percent). Except for MAE, all contracts are long term in order to limit the short-term market to 15 percent of supply. Distribution prices have as a basis an initial value, adjusted according to generation plus distribution changes in costs. As in the case of telephones, the readjustment is linked to the IGP, this time in its variant IGPM. Under such conditions, electricity tariffs in Brazil have been largely influenced by the US dollar and amount of rainfall. The US dollar acts directly, through supply from Itaipu, and indirectly, through its important role in determining the IGPM.¹⁸ In recent years, devaluations of the Brazilian real, along with low reservoir levels, have pressured tariffs.

Given all of these factors, which affect absolute energy prices and their increase over time, it is not surprising that the effect on consumers is considerable (table 7.2), especially considering that earnings are not keeping pace with rise in the cost of living. ANEL, the government agency in charge of the industry, provides some relief by setting lower rates for less consumption in a scheme designed to protect low-income groups. Rates for a major distributor in the state of São Paulo are presented in table 7.6; other states and regions have adopted similar schemes.

The low-income rates listed in table 7.6 show a progression of roughly 1 to 3, which seems reasonable. To qualify for low-income rates, a family must either have maintained monthly consumption, over the past 12-month period, at or below 79 kWh or have kept it at 80 to 280 kWh over the same period and presented proof of low-income status by enrolling in the roster of one of two locally administered, federal-income support programs: Child in School (Bolsa-Escola) and Food Money (Bolsa-Alimentação). Child in School benefits children between the ages of 6 and 15 years in families living on up to one-half the minimum monthly wage per capita. The monthly benefit, paid to the mother, is R\$15 (roughly US\$5). At the end of 2002,

18. A press article illustrated the seriousness of the burden of the dollar-indexed supply from Itaipu, showing that the average residential tariff in five partially supplied areas is roughly 50 percent above the average in five areas not supplied by the same plant. See *Folha de S. Paulo*, September 8, 2003, B-3.

the number of beneficiaries was 10.2 million. Food Money is provided to children between 0 and 6 years of age and pregnant and nursing women living in families under the same income condition. The allowance is the same, to a maximum of three children. The number of beneficiaries is about 1.6 million.¹⁹

Many families are enrolled in these federal programs. The Cardoso government developed the programs to illustrate the administration's social concern and action. The Money in School program has received international recognition, including that of the World Bank. With regard to the roster of entitled families, major concerns involve its level of completeness and the degree to which it is affected by local-level, political patronage. The press has denounced individual cases of mismanagement, but these have not tainted the programs' good image, particularly Money in School. It should be noted that, following privatization, distributors became responsible for the selection of beneficiary families for lower electricity tariffs. It appears that distributors' compliance with the existing rules have not been evaluated, although consumer interests are an obvious force in this direction.

In any case, the tariffs described in table 7.6, combined with federally established criteria for targeting income groups, is a move in the right direction. Like any such initiative, it requires evaluation and improvement. The Brazilian tradition of establishing lower tariffs for lower consumption only has benefited many middle-class and wealthy families who have second homes that remain vacant for long periods and thus have low consumption. (This problem extends electricity taxes; telephone services are subject to a flat tax rate.)

An insufficiently understood issue is that of service interruption due to payment default by low-income consumers. Distributors have difficulty adopting this measure, which requires that a company representative visit the consumer's household to cut off service. In poorer urban and other low-quality housing areas, the cutting off of service is not always done because of community protests and threats, often supported by politicians. Moreover, the customer whose service is to be cut may live in a high-crime area, which company agents prefer to avoid. In many poorer areas of Brazil, clandestine or illegal wiring, directly hooked onto the distribution cables, with no access to meters, is common. Although this study failed to obtain the number of payment defaults or an estimate of illegal wiring, its practice presents a serious problem for distribution companies.

I conclude that electricity tariffs overall have been designed to cushion the effects of needed price increases on the poorest households. They have also moved toward improved targeting. However, a comprehensive evaluation is needed to determine effective coverage of these mechanisms nationwide.

19. See Macedo (2003) for a description of these and other federal-income transfer programs. I have not been able to determine the number of families (in São Paulo or nationally) covered by the program described in table 7.6.

At the same time, moves to correct distortions in the indexation of tariffs are badly needed, given the problems in constructing the index used in the process. To reiterate, both private and state companies must contend with this issue; clearly, the problem is not privatization per se, but rather a regulatory system that sets distorted readjustments of tariffs and overlooks their effects on consumers.

Issues of access and consumption differ from those of telephone services. In general, electricity access comes with use, given that use has a high benefit-cost ratio—that is, electricity has many uses, no effective substitutes, and the poorest households have access to lower rates. According to data from the 2001 National Household Survey, only 0.8 percent (311,000) of urban Brazilian households had no access to electricity. Two-thirds of these households were poor families, half of which resided in the northeast, the country's poorest region. As expected, access is a more serious issue in rural areas, where 1.49 million households—22 percent of the total rural population—are without electricity. Sixty-five percent of the rural nonconnected are poor families, and 73 percent reside in the northeast.²⁰ For these poor segments, both access and use need improvement. However, even the relatively small problem of urban access is worthy of attention because minor investments could potentially solve the problem immediately.

Bottled Cooking Gas

Among the Petrobrás-supplied consumer products, cooking gas is used by more than 90 percent of Brazilian households. It reaches consumers after being bottled by distributors (gas pipelines for residential use have a limited scope in Brazil). Cooking gas can be considered a type of public service that private bottlers who receive Petrobrás supplies provide. It is an important source of energy and a major item in poor families' household budgets. As a rule, the average consumption is one bottle of 13 kilograms (kg) per month per family, at a present cost of R\$30 (about US\$10) per bottle filling, or 13 percent of the minimum monthly wage.

For decades, the refinery subsidized the cooking gas price, and the government set its prices to the consumer. This process favored all consumers, including the wealthy and businesses. Price-setting was first eliminated in regions with a higher average income—the southeast (in 1997) and the south (in 1998). Starting in 2001, the government eliminated the subsidy, as well as price controls, in all other Brazilian regions. To compensate for higher prices, it opted for another income transfer to the poorest households, at the rate of R\$7.5 per family per month, as long as the family is

20. These numbers do not include the northern or Amazon states, where population density of population is low.

enrolled in the rosters of the federal income programs mentioned above. No proof of acquisition is required. As the transfer is provided to consumers, cooking-gas price changes since 1997 reflect the end of the old subsidy, but not the effect of the new one. Moreover, given that price increases have been high, the government requires Petrobrás to charge lower prices when the product is sold to distributors to be bottled in 13-kg cylinders, the standard size used by most households.

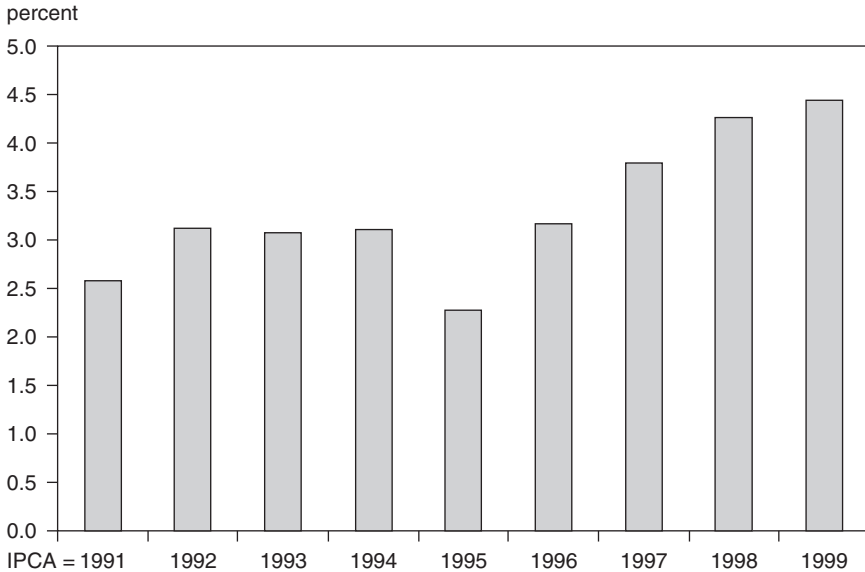
Like telephone and electricity services, there is also room for challenging the way cooking gas prices are set (table 7.2). The cooking gas price is linked to the international market and has risen fast in the wake of recent increases in the price of oil and the exchange rate. Moreover, Petrobrás supplies nearly all gas at the refineries. Although the company has formally lost its monopoly, it has not been exposed to significant competition, as private investors are still reluctant to face this giant. Thus, Petrobrás continues to act as a monopoly. In the case of cooking gas, like other fuels, its policy aims to set domestic wholesale prices to cost, insurance, and freight (CIF) international prices, even though the product comes mostly from Brazilian oil (or from imported oil that is refined in-country). Moreover, its import prices are set by long-term contracts and specific deals at prices below international rates. Thus, the CIF international price criterion makes no sense for local production, and there is room to dispute these monopolistic practices to reduce the price of cooking gas. Thus far, Petrobrás remains virtually unchallenged.

The distribution chain is too long, with one or more intermediaries between bottlers and consumers. The former have their own distribution networks; however, discouraged by past government price-setting, they have withdrawn from activities. The distribution chain also includes informal firms and individuals who deliver bottles to consumers living in the most remote areas, increasing the margins charged on prices and the burden on the poorest groups, who reside in these areas. In this case, I suggest pushing the bottlers into expanding their distribution network again. As they are only about a dozen, it would be easier to monitor their margins and put pressure on them if excesses were found. Moreover, this move is likely to increase competition along the final stages of the supply chain. It would also serve bottlers' interests, since they are often blamed for the high price of the product and then argue, unconvincingly, that they cannot interfere with the price that final distributors charge.

Total Effect of TEG Services on Cost of Living

Figures 7.1 and 7.2 measure the total effect of the prices of telephone, electricity, and cooking gas (TEG) services on a national consumer price index, the IPCA (National Consumer Price Index). The IPCA covers family incomes, ranging from 1 to 40 minimum monthly wages. The Central Bank uses the IPCA in its inflation targeting policy.

Figure 7.1 Brazil: Percent share of utility expenditures, in monthly changes of IPCA index,^a 1991–99 annual averages



a. Following weights provided by 1987–88 Household Budget Survey.

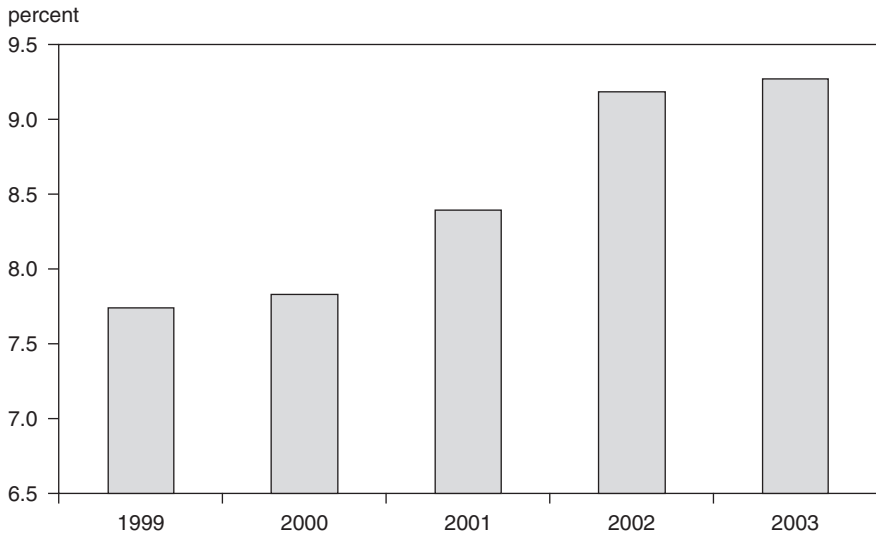
Note: Utilities include telephone, electricity, and liquified petroleum gas expenditures.

Source: IBGE, courtesy of Luiz A. F. de Lima, Bradesco Bank.

These two figures show that monthly price variations were calculated based on their weights in two household surveys conducted by IBGE, the governmental agency responsible for this index. The first survey, conducted in 1987–88, produced the TEG set of services weights used to aggregate the price variations shown in figure 7.1, in their participation over total IPCA variations. The second survey, conducted in 1995–96, served as the basis for figure 7.2.

As figure 7.1 shows, the share of the TEG set of services prices in the IPCA changes remained around 2.5 and 3 percent from 1991 to 1996. From 1997 through 1999, the increase was clear, linked in part to the privatization effect, because companies were being prepared for sale before privatization and the process included more realistic prices. One should recall that, until 1994, Brazil was close to hyperinflation. Even with an ample indexing system, public service tariffs had often lagged inflation. In the new household survey, shown in figure 7.2, the TEG set of services weight started from a higher value than the one shown at the end of figure 7.1 (close to 4.5 percent). Thus, the initial value in figure 7.2 is about 7.7 percent, which reflects higher prices, as well as the expansion of services to

Figure 7.2 Brazil: Percent share of utility expenditures, in monthly changes of IPCA index,^a 1999–2003, annual averages



a. Following weights provided by the 1995–96 Household Budget Survey.

Note: Utilities include telephone, electricity, and liquified petroleum gas expenditures.

Source: IBGE, courtesy of Luiz A. F. de Lima, Bradesco Bank.

consumers, particularly in the case of telephone lines. (Note that the household survey on which figure 7.1 is based did not include the use of mobile phones, which was identified as relevant in the subsequent survey.)

Thus, both figures 7.1 and 7.2 indicate, in aggregate, the expansion of telephone services and price increases above the index average. An additional result is the major increase in the share of household budgets spent on the TEG set of services, strengthening the notion that the pricing issue of these services concerns low-income groups.

Until now, discussion has centered mainly on the distortions in the index used to adjust telephone and electricity tariffs, the IGP, and Petrobrás price policies. An additional problem, as mentioned above, is the high taxes charged on the TEG set of services.

Taxes on TEG Services

In discussing the taxes charged on the TEG set of services, only service-specific taxes charged by the various levels of government are included; while general taxes, such as corporate income tax and others, are excluded.

Table 7.7 Brazil: Taxes on TEG set of services for residential use, 2003 (percent of price minus tax)

Service	ICMS	Range of consumption, kWh per month	CIDE ^a
Telephone	33.3		
Electricity	0	Up to 50	
	13.6	51 to 200	
	33.3	201 and above	
Bottled cooking gas	33.1		18.8

TEG = telephone, electricity, and cooking gas (LPG)

ICMS = tax on value added by trade and services

CIDE = economic dominance intervention contribution

a. The CIDE tax applies to oil derivatives only.

Sources: Telephone and electricity bills and National Association of LPG Distributors (SINDIGÁS).

Table 7.7 shows the tax on the turnover of goods and services (ICMS), which states charge and share with municipalities, and the economic dominance intervention contribution (CIDE), a federal tax on imports and commerce of oil and its derivatives.

The tax burden on the TEG set of services is high and provides leeway, if not for a subsidy, at least for a lower tax rate for low-income classes. This is not a new idea for the three services analyzed. For example, in the case of electricity, a lower tax rate is already in place for monthly consumption that remains below 200 kWh. However, as has often been the case in Brazil, its targeting is defective—that is, the second homes of middle-class and wealthy families have low consumption, on average. In the case of bottled cooking gas, the two taxes total what seems a high rate of 51.9 percent of the price of gas at the Petrobrás refineries. The ICMS is charged on the basis of an estimate of its final price to the consumer.

It has been mentioned that a cash subsidy for bottled cooking gas is supposedly available to low-income families enrolled in the roster of the federal government's income transfer programs for the poorest households. As the price of gas has risen, however, this subsidy has decreased, when measured in relation to the bottle price. It stands at R\$7.50 per family per month, or about 25 percent of the cost of a 13-kg bottle, the usual monthly consumption. However, it is not an authentic subsidy because it is estimated that the price of a bottle includes R\$5.90 of ICMS and CIDE taxes, thus reducing the net subsidy to only R\$1.60 per bottle.

Finally, as the discount is not given directly on the price, the price increases generate a substitution effect, stimulating the use of other environmentally harmful fuels, particularly wood. The press has published articles showing poor urban consumers already following this course. In rural areas, the substitution effect is likely to be stronger.

Concluding Remarks

This chapter has argued that the Brazilian privatization program begun in 1990 missed a major opportunity to democratize capital property, which would have allowed for better income distribution. To reach the goal of enhancing efficiency and equity, the program should have opted earlier and more extensively for a scheme of public offering of stock, after entitling and empowering common citizens to participate. Even when lacking voluntary savings, Brazilian workers in the formal sector participate in a mandatory savings scheme, known as FGTS, whereby workers accumulate the equivalent of one month's salary in an individual account every year, which the employer pays.

Viewing the FGTS within the context of privatization, some Brazilian economists, including myself, have defended the idea of allowing workers to use the money in their FGTS accounts to buy stocks in the companies being privatized. Active and retired workers in general could also exchange the present value of their social security pensions by stocks.

The government administrations that managed the privatization program over the past decade (1990–2000) neglected these alternatives. Since then, in 2000 and 2002, partial use of FGTS funds was allowed in public offerings of Petrobrás and CVRD stocks, respectively, but in a limited way and only after the privatization program had already made major advances. Yet, this small initiative attracted great interest from hundreds of thousands of workers, who became shareholders of those two companies, demonstrating that the idea could have been implemented in the past and can still be extended. Moreover, in both companies, the stocks that workers have bought, to date, have yielded gains that far surpass traditional returns of their FGTS accounts. However, these are two highly profitable companies; their positive share performance cannot be taken as the general rule. Even so, the idea deserves further consideration and adoption, as other companies, including Petrobrás, could be privatized using this voluntary scheme.

This chapter has also identified that, after privatization, certain public-service tariffs or prices—particularly telephone, electricity, and cooking gas—together forming what is called the TEG set of services, have been increasing well above cost-of-living indices. These prices are regulated by agencies created as part of the total privatization of telephone services, the partial privatization of electricity, and the liberalization of the oil industry. The latter is still largely dominated by Petrobrás, a state company, which has been given more leeway than ever to determine its prices, despite a formal removal of its monopoly position.

One goal of privatization was to allow for realistic (or scarcity) prices. However, I found distortions in the indexing of telephone and electricity tariffs, as they have been linked to price indices biased toward an appreciated US dollar. It is true that dollar-linked costs, as in the case of

imported electricity and oil, have also played a role in pushing prices of public services, but not to the point of justifying indexation of costs in general by indices largely affected by the appreciated dollar. For this and other reasons, the cost of the TEG set of services to consumers has accounted for an increased share in the total cost-of-living increases. Moreover, workers' earnings have lagged behind these increases.

In the case of Petrobrás, I argue that the company abuses its monopoly power when setting the price for cooking gas at its refineries, while the distribution chain, which also includes bottlers and other distributors, also shows distortions, such as compounding margins of various intermediaries (which is also worth the regulating authorities' attention). Moreover, as part of oil industry liberalization, cooking gas prices are no longer directly subsidized, for which reason, among others, their prices have sharply risen, thus aggravating the consumer's burden. The government has created a new cash subsidy to offset increased gas prices for low-income households (no proof of gas consumption required); however, the allowance has been falling in relation to the price per gas bottle, which is also aggravated by taxes that erode the subsidy's effect. Therefore, I conclude that the government should take steps to correct the various sources of price distortions of the TEG set of services, by resorting to appropriate regulatory and other measures.

It is not surprising that more realistic tariffs, regardless of their distortions, ended up creating a greater burden for consumers, especially low-income families. They face two problems: access to services, such as fixed phone lines, and their use. In the case of fixed telephone lines, both access and calling tariffs are obstacles to further extending the impressive expansion of services that came with privatization, as now millions of available lines are not in use. The high cost of access to fixed telephone lines has created a boom in the demand for mobile phones, whose access is cheaper but with more expensive calling rates. Electricity access in urban areas, on the other hand, is more universal. However, its higher cost is leading to default among poorer consumers. Still, their services, due to security and sociopolitical reasons, are not always disconnected. The rising cost of cooking gas has not only gradually eroded the existing subsidy, it has even induced poor consumers to revert to using wood.

Given these conditions, the case for alleviating the plight of the poorest Brazilian groups becomes stronger. Without excluding the role of tariffs, it has been shown that the TEG set of services has such high taxes that its reduction could provide the poorest households considerable relief. Certain states, including São Paulo, already do this with electricity, placing smaller taxes for household consumption under 200 kWh per month. However, this program has targeting problems, as even the wealthiest families benefit from it, as noted above.

To improve the targeting of smaller taxes, a registration process, similar to the one adopted by federal regulations in the case of lower electricity tariffs, should be created to allow only families enrolled in federal income transfer programs, which are designed to reach low-income groups, to benefit. This

targeting scheme has been considered an improvement over former ones, in which access was determined only by low consumption. In any case, the overall effectiveness of the current targeting scheme needs to be evaluated, and it is likely that the findings will offer room for further improvements.

Taxes are also high on telephone use and cooking gas. The latter is close to a basic need. Cooking gas dominates the Brazilian market, as electric stoves are expensive and microwave ovens still have a low penetration rate in households. High taxes on cooking gas are nearly equivalent to the subsidy provided to low-income families, thereby eliminating its effect. Telephone services in Brazil have not yet reached the status of a basic need; in my opinion, this view is misguided, based on the fact that supply was extremely scarce before privatization, when access was mostly a privilege of the middle class and wealthy. Considering that telephone services save people's time and facilitate their access to such basic services as health care and police, it would seem reasonable to regard them as a basic need, a view that should guide the implementation of tariffs, taxes, and even subsidies for the poorest households.²¹

It is important to stress that this price analysis of the TEG set of services demonstrates that the current problems do not result from privatization per se. Indeed, as the chapter's findings have shown, problems can occur in a totally privatized industry, such as telecommunications; a partially privatized industry, such as electricity; and a state-controlled industry, such as oil.

Therefore, privatization cannot be blamed for these problems. The difficulties faced in the TEG set of services is essentially the result of more realistic prices after privatization or liberalization from state intervention, combined with regulatory weaknesses and mistakes of agencies that emerged only in the late 1990s. Regulators are still engaged in an on-the-job training phase and have not managed to work effectively and efficiently in harmonizing the interests of regulated companies with those of consumers.

Finally, the aggravating fact remains: Policymakers and society at large have yet to fully acknowledge or understand the consequences of increased costs in the TEG set of services to consumers, thereby precluding emergence of a strong concern about its effects on low-income families.

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21. One example of lower telephone tariffs for the poorest groups is the United States, where those who qualify for Medicaid, Supplemental Security Income, or food stamps can obtain a discount of up to \$12 on their monthly bill. On the basis of the same targeting criterion, another program provides a 50 percent discount on the cost of a line installation (according to columnist Marshall Loeb, CBS.MarketWatch.com, July 3, 2003).

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