

privatesector

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This case study reviews Chile's experience of using tax-funded subsidy payments, contingent on delivery of service by water companies. Funding the subsidy through general taxation allows the regulator to set tariffs according to economic criteria. Targeting allows scarce resources to be directed to those who need subsidies most. Both characteristics reduce the financial burden on the government as compared with the universal subsidy used in the past. The write-up of this case study has been funded by the Public-Private Infrastructure Advisory Facility, a multidonor technical assistance program.



Incentive-Based Subsidies

Designing Output-Based Subsidies for Water Consumption

To guarantee adequate and affordable water and sanitation services for vulnerable households, Chile introduced an individual means-tested water consumption subsidy a decade ago. Although the public authorities determine how the subsidy is applied, the mostly private companies deliver the service—under a scheme with built-in incentives to ensure cost-effective service delivery by the companies and low wastage by the customers.

In the late 1980s Chile began an overhaul of the legal, economic, and institutional structure of its water and sanitation sector. An important part of the reform was a new tariff setting methodology aimed at raising water prices to the true economic cost of the service. Before the reform water tariffs covered less than 50 percent of this cost—and only 20 percent in regions where production costs were high. Steady tariff increases in the 1990s doubled real charges for Empresa Metropolitana de Obras Sanitarias (EMOS), the service provider in the Santiago metropolitan area and the country's largest water company. Rates increased even more for the smaller companies, especially those operating in high-cost regions.

As a result of these large rate hikes, a new mechanism was required to protect vulnerable households. Since connection is almost universal in Chile's urban areas, the affordability of consumption—not of connection—was the main issue, and a consumption subsidy was the obvious solution. Chile chose a means-tested subsidy tar-

geted to individual customers rather than a traditional geographic or universal subsidy.

The subsidy program, introduced in the early 1990s, relies on the water companies to deliver the service. The government reimburses them for the subsidies on the basis of the actual amount of water consumed by each beneficiary rather than a preestablished amount, a method used in some countries. With the most important water companies having been privatized since 1998, private companies now serve 73 percent of urban clients. So the subsidy scheme is essentially being implemented by private companies on behalf of the government.

How the subsidy works

By law, the subsidy can cover 25–85 percent of a household's water and sewerage bill for up to 20 cubic meters a month (though the limit now used is 15 cubic meters a month), with the client paying the rest. All consumption above the limit is charged at the full tariff.

Box Determining eligibility for subsidies

1 An eligibility scoring system called CAS is the main targeting instrument used in Chile for distributing means-tested subsidies. It produces a score for each household wishing to be evaluated based on a personal interview at its dwelling. The questionnaire used includes 50 questions on general information, identification of household members, living conditions, crowding conditions, health conditions, comfort, occupation and income, ownership of durable goods, and other socioeconomic variables. Once the interview is conducted and the CAS score calculated, the score is valid for two years, and the household can use it to apply for many different subsidies. Besides the water subsidy, eligibility for pension payments, family subsidy, free health benefits, and other subsidies is determined on the basis of the CAS score.

Many municipalities outsource the interviews to private survey companies, but still calculate the CAS score. That lowers the risk of collusion between interviewers and households, since interviewers do not know the exact relationship between the households' answers and their CAS score.

Each year the Ministry of Planning (Mideplan) determines, for each region, how many subsidies are to be granted and how they are to be applied, following several general principles: The subsidy is based on the willingness to pay for water services among low-income households. Only households that would be unable to purchase what is considered to be a subsistence level of consumption should benefit. And the subsidy should cover only the shortfall between actual charges and willingness to pay.¹ As a crude proxy for willingness to pay, Mideplan uses the benchmark set by the Pan-American Health Organization—that no household should pay more than 5 percent of its monthly income in water and sewerage charges. It is unclear whether vulnerable households in Chile would be willing to pay more or less than this 5 percent.

The subsidy scheme is funded entirely from the central government's budget. Using household survey information for each region and each company's published tariffs, Mideplan can determine how many households need a subsidy and how large benefits need to be to meet the benchmark for each region.

To obtain a subsidy, a household must apply to its municipality, which determines its eligibility mainly on the basis of a scoring system called CAS (box 1).² Another important criterion is that households must not have payment arrears with the service provider.

The municipality must award subsidies in the order of the applicants' CAS scores. Subsidies are normally renewed yearly for up to three years before a household must reapply. But if a municipality has distributed all the subsidies assigned to it and a new applicant has a lower CAS score than the last beneficiary, the municipality must withdraw the benefit from this last beneficiary and assign it to the more deserving applicant.

Incentives

The subsidy scheme has several incentive-based features. One centers on the fact that the amount of subsidy a beneficiary receives depends on the level of consumption, and results from two aspects of the program's design. First, the subsidy is expressed as a percentage of the household's bill. It is therefore a price reduction per cubic meter consumed, and no benefits are given if there is no consumption or delivery of service. Second, the household must pay the full tariff for consumption above the limit of 15 cubic meters a month.

This consumption limit reconciles the need to provide income support to low-income households for basic water consumption with the need to preserve financial incentives for efficient resource use. In essence, the Chilean water subsidy can be thought of as a rising block tariff, where only means-tested households have access to the lower priced initial consumption block.³

The fact that the subsidy scheme requires households to pay a fraction of the bill even when their consumption does not exceed 15 cubic meters helps to maintain good payment habits among clients. It also preserves service providers' incentive to improve commercial efficiency, since their income depends in part on the payment of this remaining charge. And the additional eligibility requirement of not having payment arrears has led to an improvement in clients' payment record.

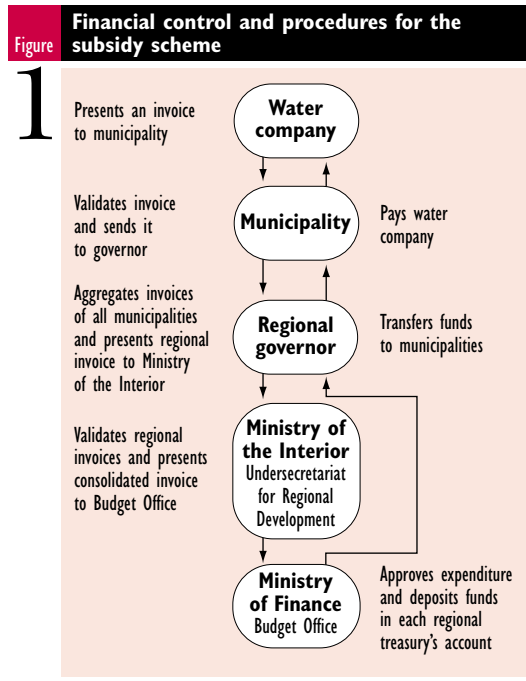
Another incentive-based feature of the scheme rests on the relationship between the

government and the service provider. This relationship is mediated by the subsidy law and its accompanying regulations.⁴ The law requires the companies to bill beneficiary clients net of the subsidy amount and then bill the municipality for the subsidies granted. The municipality is thus a client of the service provider, meaning that it can be charged interest for late payment and that the service can be discontinued as a result of non-payment (so that in the next payment period the service provider can charge beneficiary households the full amount of the bill).

This setup gives municipalities a strong incentive to transfer payments quickly to operators. The central government funds for the program are earmarked, so municipalities do not stand to benefit financially from withholding payment to the water companies. And the political wrath that could arise if they failed to pay the service providers—and thus lost the benefit for households—is potentially costly.

The financial flows and control of the program are concentrated in the Undersecretariat for Regional Development of the Ministry of the Interior (figure 1). The process requires that the company and municipality have synchronized lists of beneficiary households and that the interior ministry verify that the regional invoice is consistent with the number and value of subsidies for the region approved in the annual budget. The arrangement is clearly bureaucratic, and municipalities are often unable to pay the companies' invoices on time. Some companies charge the municipalities interest for the payment delay. The municipalities must bear the interest and debt costs resulting from late payment, since there is no provision in the national water subsidy budget for these charges.

Despite this problem, the fact that companies receive a reimbursement for services and subsidies already delivered has several benefits. The arrangement gives the companies full incentives for providing efficient and reliable service. The subsidies accrue to households, not companies, and the amount of resources distributed is independent of the service provider's operational efficiency. Companies should be indifferent with respect to the subsidy scheme and receive no financial benefit from the program, except



perhaps through the reduction of payment arrears by poor households.

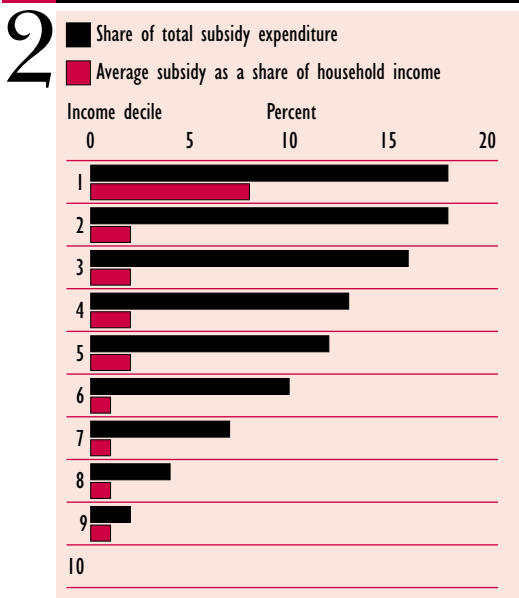
Take-up

In 1998 nearly 450,000 subsidies were distributed nationally, benefiting almost 13 percent of households by an average US\$10 a month. The total cost was US\$33.6 million. In some regions where incomes are low and water charges high, close to a third of households received the subsidy. On average, 52 percent of benefits in each region accrue to the three lowest income groups, and only 23 percent leak to the five highest income groups (figure 2).⁵ Subsidies represent a larger share of income for poorer households, nearly 8 percent for the lowest income group.

Lessons

The introduction of the subsidy—and especially the targeting results achieved—have been key to Chile's ability to raise water tariffs to levels reflecting costs without compromising its social and distributional goals. And the costs to the government of doing so have been low. The cost of the subsidy in 1998, US\$33.6 million, was well below the cost of the previous universal subsidy scheme. Before the reforms in 1988 the water and sewerage sector had a financial deficit of 2 percent of assets. But in 1998 this situation was reversed.

Figure 2 Distribution of water subsidies across income deciles, November 1998



Note: Income deciles are based on per capita household income. Data include only households with shared or own water connections.
Source: Mideplan (Ministry of Planning), "Encuesta de Caracterización Socioeconómica Nacional" (Santiago, 1998).

Companies reported a surplus of close to 4 percent of assets and net profits of US\$107 million, more than three times the cost of the subsidy scheme (excluding administrative costs).

Despite the successes of the subsidy program, several issues need to be considered if such a scheme is to be replicated in other countries. First, metering is a prerequisite for this type of output-based consumption subsidy. For countries with low coverage of meters among low-income households, such a scheme may not be viable. In these countries, however, the most pressing social issue usually is not ensuring that water is affordable, but increasing the number of connections. For that purpose, a means-tested subsidy analogous to the one in Chile would be easier to apply, since metering is not required. Service providers could charge new clients the true cost of connection—perhaps providing some credit by permitting payment in installments—minus a subsidy to eligible households. The government could then reimburse the service providers on the basis of the number of eligible households connected.

Second, the means-tested targeting used in Chile requires a certain amount of institutional capacity, especially at the municipal level. Even in

Chile, some municipalities still lack sufficient capacity to adequately administer and control the subsidy scheme. For countries with less institutional capacity such a complex system may not be viable. These countries could adopt simpler targeting mechanisms, for example, a scheme based on a geographic poverty map, like that used in Colombia. Moreover, a scheme using a connection rather than a consumption subsidy will require less institutional capacity, since households' eligibility must be evaluated only once.

Third, an individual means-tested subsidy may be expensive to apply. Chile uses the same targeting instrument to distribute several welfare benefits, lowering the administrative costs significantly. Applying such a scheme for only one subsidy program may be too expensive. Again, however, the administrative costs for a connection subsidy are much lower than those for a consumption subsidy.

Notes

1. This is not to say that no further benefits should accrue to low-income households for purely distributional reasons, only that the best way to meet such goals may be through general welfare programs, not a sectoral consumption subsidy.

2. CAS comes from *Comités de Asistencia Social Comunal* (Communal Social Assistance Committees), which promoted the idea of using a standard measure for allocating social resources among the poor.

3. A consumption-based subsidy requires that each household have a meter. This is not much of an issue in Chile, where metering is almost universal in urban areas.

4. These laws and regulations are available in Spanish at www.siss.cl.

5. By comparison, in Colombia, the only other Latin American country with an important formal water subsidy scheme, 37 percent of subsidies reach the five highest income groups.

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