Many governments face the difficult task of reducing the size and improving the efficiency of an overstaffed public sector as part of a general endeavor to increase economic growth and cut fiscal deficits. These retrenchment efforts often face considerable political opposition. To overcome opposition and to treat public employees who lose their jobs fairly, governments often provide severance payments to workers who leave public employment. However, problems in the design and implementation of these compensation schemes frequently reduce their efficiency and may result in the failure of the retrenchment.

This chapter provides an economic analysis of downsizing operations, illustrated by examples of operations implemented during the 1980s and 1990s. It discusses the rationale for this sort of reform and addresses the problem of adverse selection in voluntary separation schemes and the difficulties in appraisals of financial and economic returns. The analysis also identifies key stakeholders in the reform, their likely responses, and the dissemination channels of reform impacts. The chapter examines the consequences for households and the economy at large, the ways downsizing may affect displaced public sector workers, and the distributional impacts of downsizing for different groups of these workers. In order to advise policymakers, the chapter presents a simple tool for designing compensation packages that can outperform typical rules of thumb on the grounds of both financial returns and fairness. Finally, some threats and risks to these reforms are discussed.
CONTEXT OF REFORM: TYPES OF DOWNSIZING OPERATIONS

During the 1980s and 1990s, public sector downsizing and retrenchment operations were implemented around the world, particularly in Africa, Latin America, and the transition economies. These operations targeted government agencies, state-owned enterprises, and the military. Some of the options governments used to downsize overstuffed civil services and state-owned enterprises are as follows:

- **Voluntary departure schemes.** This mechanism uses an arbitrary rule typically based on seniority and current earnings so that the workers to be let go are offered higher compensation packages the longer their tenure in the firm. For instance, separated workers receive two years of salary, or one month of salary per year of service, or some other combination of these seniority and current earnings variables. This mechanism helps bypass the legal obstacles in countries where outright layoffs are not allowed. This “buying out” scheme greatly minimizes political costs. However, two common problems diminish the effectiveness of this mechanism: (1) targeting errors, because sometimes only the best public sector workers leave; and (2) overcompensation or undercompensation, because the compensation may bear little relation with the losses experienced by the workers as a result of separation.

- **Involuntary retrenchment schemes.** This option may entail involuntary “soft” separations involving the strict enforcement of mandatory retirement rules, as well as the removal of workers from the payroll who are not working (ghost workers), or “hard” separations, such as layoffs. Depending on the outcome of the voluntary program and on the political leverage of workers, redundant staff may still need to be laid off against their will. Similar to the voluntary case, a rule of thumb involving salary and perhaps seniority in the public sector is used to calculate the compensation package.

- **Contracting-out schemes.** One way to minimize labor redundancies is to contract out activities previously executed within the enterprise to private cooperatives established by former enterprise employees.

- **Employee ownership.** To build support for privatization, some governments have reserved shares for employees in the to-be-privatized enterprises. This mechanism has been used in several sectors in Argentina, Bangladesh, Bolivia, Chile, Ghana, Mexico, Morocco, Pakistan, Peru, Turkey, and other countries. In addition to the financial gains, employee ownership gives employees a direct stake in the performance of the companies.
Privatization. Privatization is also a way to achieve public sector downsizing. (This chapter covers cases in which state-owned enterprises are downsized and then privatized, but not cases in which the enterprises are first privatized and then downsized.)

Haltiwanger and Singh (1999) provide a review of 41 downsizing operations in 37 countries. Among these operations, the average program cost was $400 million, and the total financial cost of the operations was large, about $12 billion. In terms of retrenchment methods (see Table 4.1), involuntary hard separations (layoffs) dominated in the total reductions in employment; they accounted for 47 percent of total worker separations, partly because of the massive employment retrenchment experiences in Eastern Europe. In contrast, involuntary soft separations and voluntary separations were more common in Africa, Asia, and Latin America. However, even though most operations included components consisting of voluntary separation schemes (accounting for 77 percent of the operations studied), the employment reductions that resulted from these components accounted for only 23 percent of total worker separations.

In the majority of cases, some sort of compensation or safety net enhancement was provided to retrenched workers. Only 15 percent of all operations supplied no direct compensation. By contrast, compensations through severance payments were used in 68 percent of the cases, while pension enhancements were applied in 29 percent of the operations. Safety net enhancements that were intended to assist unemployed workers and workers attempting to relocate were utilized in 63 percent of the operations; a majority of these enhancements involved some form of training assistance (54 percent).

### TABLE 4.1. Distribution of Employment Reduction Methods in Retrenchment Programs, 1990s

<table>
<thead>
<tr>
<th>Method</th>
<th>Programs</th>
<th>Worker separations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involuntary hard (layoffs)</td>
<td>41.5</td>
<td>47.0</td>
</tr>
<tr>
<td>Involuntary soft (enforcement of rules, removal of ghost workers)</td>
<td>65.0</td>
<td>30.0</td>
</tr>
<tr>
<td>Voluntary</td>
<td>77.5</td>
<td>23.0</td>
</tr>
<tr>
<td>All three methods combined</td>
<td>17.5</td>
<td>13.4</td>
</tr>
</tbody>
</table>

Source: Haltiwanger and Singh 1999.

Note: Values are based on 41 retrenchment programs in 37 countries. Values in the middle column represent the percentage of operations where a particular method (or combination of methods) was applied. Since many operations applied a combination of methods, the values in the columns do not sum to 100 percent.
The extent of labor redundancies may be such that any serious downsizing is politically unfeasible, at least if it were to rely on involuntary dismissals. This explains the increasing popularity among developing-country governments, multilateral organizations, and donor countries of a voluntary approach to downsizing a public sector workforce. Specifically, this approach involves offering severance payments to encourage redundant workers to quit, thus overcoming their resistance to downsizing, restructuring, and privatization. In many developing countries, such buying out of redundant workers is, in fact, the only way to bypass the legal obstacles to the dismissal of public sector employees.

Voluntary separations, contracting-out schemes, and employee ownership alternatives help reduce political opposition to a downsizing operation. However, the risks of incurring errors in targeting and setting the wrong payment compensation need to be addressed. The evidence reported by Haltiwanger and Singh (1999) shows that the number of total separations is greater than the total reduction in employment, indicating that there is rehiring and new hires. Rehiring is a particularly acute problem in that it implies targeting errors in a retrenchment program. The need for rehiring makes evident that some workers essential to the running of the downsized agency or state-owned enterprise were incorrectly separated. Significant rehiring was found in about 20 percent of all operations studied by Haltiwanger and Singh. This is one among several risks in retrenchment programs, and it has implications for the economic returns to the operations. In addition, public sector retrenchment may entail fiscal, productive, and other forms of externalities that go beyond the pervasive effects of overstaffing. These externalities may also contribute to unexpected divergence in the financial and economic returns to a downsizing operation. In particular, externalities create additional economic costs that may not be taken into account in financial appraisals of downsizing, such as the diminished earnings and other economic loses experienced by private sector workers in activities linked to state-owned enterprises that are the focus of downsizing operations.

**RATIONALE FOR UNDERTAKING PUBLIC SECTOR DOWNSIZING**

The rationale for downsizing the public sector is to reduce the size (workforce) of public agencies and state-owned enterprises in an attempt to improve efficiency, while reallocating workers where they might be more productive. It may be part of an effort to move toward a more market-oriented economy. The operations are usually part of an overall effort to
increase economic growth and cut financial deficits in the public sector. In most developing countries, the public sector is characterized by public agencies and state-owned enterprises that are overstaffed, bureaucracies that are bloated, and public services that are inefficient (Box 4.1):

- **Overstaffing.** High levels of public sector employment have been an important feature of African, Latin American, and transition economies for decades. In part, these high levels of employment reflect the belief that the public sector should be at the center of economic activity. Political patronage and cronyism may also be motives. Among other issues, overstaffing generates serious financial problems in terms of both payrolls and the funding of retirement pensions.

- **Burgeoning payrolls.** In many developing countries, public sector employees and employees of state-owned enterprises benefit from excessively high wages and fringe benefits relative to the opportunities they might face in the private sector. Coupled with overstaffing, this often leads to unsustainable fiscal deficits that limit the ability of governments to provide infrastructure and services such as education and health care.

**BOX 4.1 Labor Market Characteristics of State-Owned Enterprises**

In India and Turkey, state enterprises were estimated to be overstaffed by nearly 35 percent in the early 1990s. Of the approximately 120,000 people employed in Sri Lanka’s state enterprises, 40–50 percent are estimated to be redundant. In Ghana and Uganda, overstaffing levels commonly run to 20–25 percent, according to estimates. Overstaffing usually occurs in administrative and clerical positions, not in the more technically skilled jobs for which there is high demand. Overstaffing is most pervasive in enterprises that have operated as monopolies and benefited from heavy government subsidies and other forms of protection. These typically include large industrial loss-making enterprises and enterprises responsible for infrastructure. Overstaffing in some Egyptian steel companies reached 80 percent in 1991, while Turkey’s loss-making steel enterprises were overstaffed by as much as 30 percent. State-owned railway companies, burdened with excess capacity and declining demand as a result of competition from other transport sectors, are commonly overstaffed by 40–60 percent. In Brazil, about 20,000 of the railway enterprise’s 42,000 employees were surplus and exhibited lower productivity levels than the corresponding employees in industrialized countries, as well as in neighboring countries such as Argentina and Chile. State telecommunications companies fare no better. By the end of 1988, employment in Mexico’s Telmex had reached 50,000, and, by the end of 1990, labor productivity was about half the international standard (10.5 workers per 1,000 lines).

Inefficiency. Attempts to reduce payrolls through wage compression and declining real wages frequently lead to absenteeism and the departure of more skilled staff, and this contributes to public sector inefficiency.

Technological progress. The pace of technological progress around the world is causing natural monopolies to disappear, thus obliging formerly somnolent state-owned enterprises to face competition.

The specific motives triggering downsizing decisions vary across countries and agencies, as Haltiwanger and Singh point out:

The most prominent factors leading to retrenchment were fiscal crises and a general effort to reduce the size of government in the economy. However, in some cases, the compelling factors appeared to be structural problems with the type and mix of government workers. Wage compression among public sector workers leading to morale and staffing problems was a common complaint. Overstaffing, including the problem of ghost workers, was another common complaint. Finally, the downsizing of the military played a prominent role as well. (Haltiwanger and Singh 1999, 34)

The decision to downsize

Rama (1999) provides a decision tree intended to assist policymakers in analyzing the possibility of downsizing. This decision tree is organized around critical questions on downsizing. It is reproduced in Figure 4.1.

The first question in the decision tree refers to the appropriate private sector counterfactual: is privatization advisable? In some cases, the choice is not between downsizing or not downsizing, but rather between downsizing by the government or downsizing by the private sector. This choice involves efficiency considerations and public interest issues that need to be carefully evaluated in each case. But whether downsizing should precede privatization when the latter is advisable is an issue that needs to be addressed.

The second question in the decision tree refers to the overstaffing problem: is overstaffing an obstacle to privatization? One reason downsizing may be justified prior to privatization is the credibility of the reform process. The ability to overcome labor resistance and trim employment may, indeed, be seen as a signal that the government is committed to privatization. This signal, in turn, would reduce the uncertainty faced by potential investors, thereby making privatization possible. If no action is taken to overcome the opposition of those who stand to lose from privatization, chances are there will be no bids for
Public Sector Downsizing

Q1: Is privatization advisable?

Q2: Is overstaffing an obstacle to privatization?

Q3: Is adverse selection a serious concern?

Q4: Is loss higher than legal compensation?

Q5: Is full compensation of workers needed?

Source: Rama 1999.
the privatization of the enterprise. The irreversibility of investment
decisions thus provides a rationale to buy out the workers as part of the
preparation for privatization.

If downsizing has not been carried out by the government prior to
privatization, the new private owners will have to deal with labor redund-
dancies. The amount and composition of labor shedding would proba-
bly differ in both cases, and the average compensation per worker would
be different, too. Moreover, the price the potential buyers would be will-
ing to pay for a state-owned enterprise would vary depending on the
extent to which the enterprise is overstaffed. Because of the ensuing dif-
fences in the extent of labor shedding, in the amount of the compen-
sation offered, and in the price of the privatization of the enterprise,
assessing the net gains from downsizing prior to privatization may be dif-
ficult. But a net loss is likely.

To begin with, if downsizing has been managed by the government
before privatization rather than left to the new private owners, the total
number of displaced workers is probably larger. There are examples in
various countries in which the new owners have kept the labor force more
or less intact, tending to confirm the claim that net reductions in employ-
ment have been generally small in privatized firms. Based on a systematic
comparison of employment patterns across Polish firms during the tran-
sition to a market economy, Frydman et al. (1997) show that employ-
ment cuts were larger in state-owned enterprises than in otherwise
similar privatized firms. It thus seems that the government may get rid of
workers the new owners would prefer to keep. Furthermore, when the
government is in charge of downsizing, the “wrong” workers may be separ-
ated from their jobs at an excessively high cost. A “wrong” composition
of separations is possible because governments are usually not particu-
larly good at managing human resources. If governments could make the
right decisions regarding whom to retain and whom to lay off and were
able to deliver on these decisions, the rationale for privatization would
be seriously weakened. An excessively high cost of separation is likely
because governments can shift part of the downsizing costs to the tax-
payer, for instance, in the form of early retirement programs, while, in
principle, the new owners cannot do this. The temptation to resort to
golden handshakes is therefore likely to be stronger if downsizing takes
place prior to privatization. Case studies suggest that this has happened
in practice.3

Unnecessary downsizing costs cannot be recovered through a higher
price for the state-owned enterprise during privatization. In theory, the
privatization price would, of course, increase every time a redundant
worker is separated from his or her job. But getting rid of workers who are not redundant would not increase the price. And, even for the genuinely redundant workers, the increase would be equal to the amount of resources the new owners would have spent to secure their separation, not to the amount of resources actually spent (directly and indirectly) by the government. Having studied 236 privatization experiences in Mexico during the 1980s and early 1990s, López (1997) concludes that employment reductions through downsizing prior to privatization have a marginal impact on privatization prices. Given the substantial cost of prior-restructuring policies, the key lesson from López is “do not do too much; simply sell.”

The third important question concerns the adverse selection problem: is adverse selection a serious concern? Adverse selection arises when workers decide whether to accept or reject a severance payment offer based upon information only observable by them, such as the true productivity of the workers. Buying out the workers is a simple and convenient way to defuse the opposition to public sector reform. But severance payments create an incentive for the most productive workers to leave the public sector and for the least productive ones to stay. This is generally the case because workers who are more productive usually have better outside opportunities than do their less productive peers, and, so, when the compensation package is profitable, the workers who are more productive are the first to leave. This may not be socially desirable in the case of public sector units producing valuable services. In this case, it is better to target separations based on the observable characteristics of the workers and to use a more appropriate method to deal with the unobservable differences among workers.

The fourth and fifth questions concern the assistance to be provided to the separated workers: Is the loss among separated workers greater than the legal compensation? And is full compensation among workers needed? No matter the combination of cash, retraining, and redeployment services offered, there is no justification for spending more than would be needed to buy out the redundant workers. The expected losses from separation thus offer a benchmark against which to judge both the existing laws on compensation and the ad hoc packages that may be proposed in the context of downsizing. Labor market data can be used to predict these losses according to observable characteristics of the workers, such as education, seniority, or gender.

Retraining and other redeployment programs deserve special attention in assessing the cost of the assistance to be provided to separated workers. More resources may be spent on this component than on direct
compensation. However, the evidence on the effectiveness of retraining and other redeployment programs is mixed at best. If these programs are to be part of the downsizing operation, a safeguard should be introduced so as to minimize resource waste. Basically, separated workers should be allowed to choose between enrolling in any of the programs offered and cashing in on the equivalent of the cost of these programs per individual. This demand-driven approach would make it more difficult for vocational training and (often ailing) government agencies to divert excessive resources from the downsizing operation.

The adverse selection problem

In a retrenchment program, the goal is to dismiss redundant workers, in particular to trim low effort and unproductive workers. However, in several cases, especially in government administration and state agencies, the effort levels or productivity of workers are not always observable or are difficult to measure. It is expected that workers will decide whether to accept or reject a severance payment offer using this private information strategically. This is the adverse selection problem.

Standard voluntary separation programs usually lead to the departure of workers who show high productivity because these workers have the best prospects outside the public sector. It follows from this that standard voluntary separation programs are not appropriate in all circumstances. For instance, these programs would lead to the wrong composition of layoffs if they were applied to public sector units that produce valuable services (such as health care) and operate in a tight labor market (where unemployment is low, and there are many vacancies). The fact that these programs have been used systematically in the past could be one of the reasons so many separated workers have been rehired in the aftermath of downsizing operations.

Several alternatives to standard voluntary separation programs have been proposed in cases where adverse selection is a serious concern. These include randomization, the menu approach to induce workers to reveal their productivity, and targeting mechanisms. These are now discussed in turn.

In the randomization of job separations (Diwan 1994), the probability that a public sector worker would be dismissed from his or her job would be equal to the estimated percentage of redundant workers. The advantage of this alternative is that the composition of separated workers resembles the composition of the workers who remain in the public sector (thus, “randomization”). For units producing socially valuable ser-
vices in a tight labor market, the alternative therefore represents an un-
ambiguous improvement compared with standard voluntary separation
programs. However, Levy and McLean (1997) argue that, in general, ran-
domization is not an efficient mechanism for downsizing the public sec-
tor. This is so because, in terms of profit maximization, closing down
these units or leaving them untouched could be preferable to a random-
ized downsizing. Levy and McLean show that the same argument applies
to standard voluntary separation programs as well.

In the presence of unobservable information, an efficient mechanism
for downsizing must lead workers to reveal their productivity. Jeon and
Laffont (1999) show how to implement such a mechanism by means of
a menu of combinations of wages and severance payments. Each combi-
nation, called a pair, is associated with a different probability of separation.
If the probability of separation is equal to 1, the pair can be interpreted as
a standard severance payment offer. If it is equal to 0, it can be viewed as
a typical open-ended public sector contract. All the workers choosing the
first pair are retrenched, whereas all those choosing the second pair are
retained. For pairs in between these two extremes, some of the workers
are retrenched, whereas others keep their jobs. If the menu is appropri-
ately designed, workers should choose the pairs associated with their
socially optimal probability of separation. For instance, if the overstaffed
public sector unit produces a valuable service and operates in a tight labor
market, workers with low productivity should choose a pair associated
with a strictly positive probability of separation.

However, setting up the right menu might be difficult in practice, so
that other, simpler devices for identifying workers with low productivity
in the public sector should be used as well. In their cross-country survey
of downsizing operations, Haltiwanger and Singh (1999) find that the
targeting of separations significantly reduces the probability of subse-
quent rehiring. The targeting mechanism can include such simple devices
as chasing out ghost workers. The experience of the Central Bank of
Ecuador, analyzed by Rama and MacIsaac (1999), is also interesting in
this respect. After a first, disastrous attempt to downsize using voluntary
separation programs, the bank decided to classify all its personnel in three
categories: those who were essential for the bank’s functioning, those who
were clearly redundant, and those who were difficult to place in either of
the first two categories. The classification was based on the nature of each
worker’s unit and on each worker’s occupation and educational attain-
ment. Essential workers did not have the option to leave; workers who
were clearly redundant did not have the option to stay; and the rest of the
workers were offered a voluntary separation program.
Financial and economic returns to downsizing

As in any investment project, it is useful to distinguish between the financial returns and the economic returns to a downsizing operation. The financial returns result from a reduction in public sector expenditures, particularly the public sector wage bill. When the present value of this reduction is higher than the upfront cost in terms of severance payments, safety nets, and the like, downsizing has positive financial returns. Economic returns, in contrast, result from a better allocation of labor across sectors. If the contribution of displaced workers to aggregate welfare is higher when the workers are outside rather than inside the public sector, downsizing is likely to yield positive economic returns. The failure to identify labor redundancies correctly in specific government agencies and state-owned enterprises explains the disappointing results of some downsizing operations.4

In the general case, however, assessing the returns to downsizing operations is a difficult task. The typical evaluation compares the savings in terms of public sector wages with the costs in terms of severance payment packages, retraining, and redeployment programs. But this comparison is misleading. Overstaffing is only one among several distortions characterizing the public sector. Another example of a distortion is the fact that public sector wages usually differ from private sector wages, and wages in the public sector are therefore not a good indicator of the opportunity cost of labor. Furthermore, the externalities from mass retrenchment should not be ignored. The most obvious externalities arise in the context of one-company towns, which may easily become ghost towns after downsizing has taken place. But public sector downsizing leads to fiscal externalities, too, because it reduces the equilibrium level of government expenditures and, hence, the burden of distortionary taxes. Because of all these distortions, the economic returns to public sector downsizing can be either higher or lower than might be suggested by the financial returns, and financial returns may thus be a poor indicator of economic returns.

The contrast between remarkably high financial returns and relatively low economic returns should be a warning for policymakers. The inability to distinguish between these two types of returns may give rise to an excessively upbeat assessment of the potential gains from downsizing. The problem is that economic returns are much harder to measure in downsizing projects than in standard investment projects. In the latter sort of projects, the difference between financial and economic returns arises from the different valuation of output prices and input costs in the presence of market distortions.5 For instance, investing in an activity protected by import tariffs may yield high financial returns, but low or even...
negative economic returns. The gap between the two assessments stems from the use of different prices to value the output flow created by the investment project. The tariff-inclusive price is appropriate for the financial appraisal, while the international price needs to be used for the economic appraisal. But, apart from this difference in valuation, the items involved in the two appraisals are basically the same in standard investment projects. This is not true in the case of downsizing projects.

Haltiwanger and Singh (1999) evaluate the financial returns to selected operations based on the number of years it takes to recover the direct financial costs in the form of lower expenditures. This indicator is called the break-even period. In 15 downsizing operations for which the required information was available, the performance of downsizing operations was remarkably good. The average break-even period was two years and four months, and it exceeded four years in less than 10 percent of the cases. Few investment projects display such high financial returns. However, these results should come as no surprise. If, say, a couple of years of salary are offered to whoever is willing to leave the public sector, as is often the case in practice, the upfront spending is recovered in the form of a lower wage bill in a mere two years. However, this calculation does not indicate whether the workers who took the offer and left the public sector were redundant.

Haltiwanger and Singh provide an indirect measure of the economic returns to downsizing by examining the percentage of the displaced workers who were subsequently rehired by the restructuring agencies or state-owned enterprises. (Box 4.2 supplies the example of Peru.) Note that rehires are different from new hires. The latter are not necessarily an indication of failure because the new recruits may have skills that were missing among the displaced workers. Rehires, in contrast, indicate a poorly handled downsizing process. In the best case, they imply that workers who were essential to the operation of the restructured agencies or state-owned enterprises were mistakenly considered redundant. In the worst case, they suggest that workers who had no intention of leaving the public sector were able to cash in through golden handshakes. It is difficult to believe that downsizing projects characterized by incompetence (in the best case) or corruption (in the worst case) may have performed well at reallocating workers based on their productivity inside and outside the public sector. Other things being equal, a high percentage of displaced workers rehired can therefore be seen as an indication of low economic returns to downsizing.

Workers were subsequently rehired in 40 percent of the downsizing operations surveyed by Haltiwanger and Singh, and rehiring was
substantial in 20 percent of the operations. However, the fact that 60 percent of the operations display no rehiring does not imply that essential workers did not leave. Moreover, rehiring provides no information on a second type of error, which consists in retaining public sector workers who show low productivity. This second type of error is likely to occur even in programs that display no rehiring.

STAKEHOLDERS

Besides the financial costs of separation packages designed to compensate displaced workers, mass layoffs may create social and political costs. Downsizing operations directly affect stakeholders other than separated

---

**BOX 4.2 Retrenchment and Rehiring in Peru**

With the support of external donors, Peru initiated two labor adjustment programs in 1991, one for the civil service and one in the office of tax administration. The programs were completed in 1993 and 1992, respectively. The first used a wide variety of voluntary and involuntary reduction methods to dismiss 250,000 workers over three years. The induced departures involved both lump-sum severances and pension enhancements. Targeting by skill was not common. Targeting by age was implicit in the reliance on pension enhancements to induce voluntary separations. Poor targeting aggravated the shortage of human resources. This led to the significant rehiring of separated workers. In all, 163,000 of the originally retrenched workers were rehired. Severance packages equivalent to about $1,000 were provided to less than half (112,000) of the workers who were separated. This limited the direct financial losses associated with the significant rehiring. The break-even period was 2.6 years.

In contrast, the program in the office of tax administration appears to have been a model of good targeting. It also used a mix of voluntary and involuntary reduction methods. The incentive for voluntary separations was an enhanced pension. Workers targeted for involuntary separation were selected on the basis of a written test. Thus, targeting was worker specific and objectively determined. Two-thirds of the workforce (2,034 workers) were separated. Subsequently, the office of tax administration hired 1,309 workers who were new (not rehired), again based on a written test. Because the office established objective levels of productivity and competence, little basis remained for rehiring separated workers (skilled, but severance induced). Rehiring was barred for 10 years, and none was evident. Workers who remained in the office experienced a huge increase in their salaries. Tax collections more than doubled, and so did the office’s revenues (2 percent of tax collections); however, these revenues were not sufficient to cover the salary increases, and the scheme incurred a net financial loss of $47 million in present-value terms. This highlights the importance of evaluating program performance along multiple dimensions; not only organization-level financial costs and benefits must be evaluated, but also the broader impact of the program.

workers, such as entire communities in the case of one-company towns, caterers and providers of services to state-owned enterprises, and final consumers and taxpayers. The fiscal flows and political burdens of downsizing may affect central and local tiers of government differently. In some cases, this type of reform may also generate “signals” in the sense that multilateral organizations and donor countries supporting a structural reform process in progress might view the downsizing as a commitment to the overall process. A Poverty and Social Impact Analysis (PSIA) of downsizing operations must identify and take into account the interests and potential responses of these different and likely heterogeneous stakeholders.

**Workers**

Workers in state agencies or state-owned enterprises constitute the most visible stakeholders in this kind of reform. The welfare of separated workers is directly affected by a downsizing operation. Retrenched workers stand to lose in terms of earnings and benefits, but also in terms of forgone intangible benefits such as the lower levels of effort that may characterize jobs in the public sector, acquired job security, or maternity leave benefits for women. At the same time, even if public sector workers do not represent the poorest sector in a society, the families and other people who depend on the earnings of these workers may also experience welfare losses as a result of downsizing operations.

In preparation for a downsizing operation, the political power of public sector workers and the unions with which they are affiliated must be assessed. Public workers are usually the most vocal group in a society; they are usually affiliated with strong unions, and, as a group, have more education than the rest of society. In most countries, they represent a well-organized political force and form a contingent of hundreds of thousands of voters. Involuntary separation schemes that imply mass layoffs or voluntary departure schemes that cause workers to perceive that they are being coerced to volunteer would face strong political opposition since public sector workers can readily catch the attention of the media and mobilize large pools of citizens; this opposition can bring the operation to a halt and may even bring it to an end.

**One-company towns and communities**

Other directly affected groups may consist of entire towns or communities in which public companies have settled. Many developing countries and, especially, transition economies have numerous one-company towns,
the distinctive feature of which is the presence of single, large employers within local labor markets. The term one-company towns applies to mining towns and to the communities growing up next to large manufacturing plants, such as steel mills or armament factories. In all cases, the company accounts for a substantial share of the jobs in the town, but a particular characteristic is that even those people who do not work for the company depend on it somehow to make a living. If the company were to cease operations, the one-company town could easily become a ghost town. Decisions affecting state-owned enterprises in one-company towns should therefore not be based solely on considerations of profitability, but, rather, they should incorporate the costs to the surrounding population in terms of employment and earnings. In some cases, it may be desirable from a social standpoint to keep a state-owned enterprise open instead of transforming the one-company town into a ghost town.6

Caterers and providers of services to state-owned enterprises

Another group of stakeholders directly affected by a downsizing operation is comprised of smaller businesses that cater for or provide services to public agencies or state-owned enterprises and their employees. As a result of retrenchment efforts, caterers and providers of services to state-owned enterprises may incur welfare losses or even abandon their means of livelihood. Thus, the reduction of public employment in overstuffed agencies may generate negative earnings and employment externalities for these people.

The state

Central government agencies such as a ministry of finance, a tax collection administration, or a social security administration will likely favor downsizing operations as long as these operations are perceived as helping to control fiscal imbalances by reducing the state wage bill, pension obligations, and other liabilities. Ministries of finance in developing countries are usually in charge of reform processes aimed at reducing the size of the public sector and making the public sector more efficient, and these will try to show off the advantages of the reforms for the sake of general opinion and potential private buyers of state-owned enterprises. In contrast, sector ministries will probably have more ambiguous responses. They stand to gain if a reform is seen to remove from the state the direct responsibility for the provision and the quality of the services provided by privatized state agencies and state-owned enterprises. By contrast, they
may stand to lose if the reform is perceived to reduce their political power relative to other ministries or authorities.

Local government agencies will probably respond negatively to downsizing operations, particularly if the magnitude of the layoffs is considerable or if entire communities are affected, which is likely the case for one-company towns. Both scenarios represent extremely heavy political burdens at the local level. Local governments are generally on the frontline in facing increased unemployment rates and political protests and opposition to reform processes as a result of downsizing. Additionally, local bureaucracies will probably lose political power because they no longer have credible control over employment allocations in public companies or state agencies. Finally, local governments may also be concerned about the allocation of assets, asset ownership, and liabilities, especially if downsizing is an intermediate step toward privatization. Thus, as a result of downsizing operations, fiscal flows may not favor local governments at all; it is likely that the proceeds from privatizations will flow directly to the central government.

Multilateral organizations and donors

Multilateral organizations, such as the World Bank or the International Monetary Fund, and other donors are interested in the overall public sector reform processes undertaken by developing countries. Many of the loans made by these organizations and donors are conditioned by the progress of reforms. In the case of downsizing, these institutions may lend money to finance severance payments and compensation packages and may also be involved in advising governments on the processes.

Taxpayers

Consumers are the largest single class of stakeholders. However, consumers are usually less organized than are public sector workers. In part, this is because there are several distinct groups within this class, each with different, potentially conflicting interests (such as current versus potential consumers) and different relative levels of political power (such as urban versus rural consumers). As taxpayers, consumers may respond positively to downsizing operations if they perceive their taxes being used in more cost-effective ways and if inefficiencies are eliminated or at least reduced by the reforms. Supporting overstuffed state agencies and state-owned enterprises entails a double burden for society. A key direct cost is represented by the amount of resources that are transferred to public
companies and that thus cannot be used for consumption or investment purposes. A more subtle burden results from the use of distortionary taxes to collect these resources because distortionary taxes may affect household decisions regarding labor force participation, the effort to be exerted on job productivity, savings, and so on. In other words, transferring one dollar to a public sector company may cost the rest of society more than one dollar because the distortionary taxes may reduce private sector productivity or the efficient allocation of resources.

**IMPACT CHANNELS**

This section explores the channels of the direct and indirect impacts of downsizing. These channels include employment and wages, fiscal flows, productive externalities, and the access to and quality and price of services.

**Employment and wages**

Changes in employment and wages both among affected workers and in society as a whole can be expected to occur because of downsizing. For some of the separated public workers and workers in state-owned enterprises, the immediate employment and wage effects may be negative. For most of these workers, the transition and relocation costs can be particularly burdensome. Some public sector employees will have spent a large portion if not all of their working lives in public agencies or state-owned enterprises. It is likely that their skills do not match those required by private companies. Moreover, some of these workers will be too old to find jobs in private companies at the wage levels commiserate with their experience. Some of them may never find other jobs, and, even if they do, they will probably spend time in unemployment. Meanwhile, some of the more productive workers who may choose to leave their public jobs will be able to perform well in the private sector. High-productivity workers with superior prospects in the private sector usually stay in the public sector only because they value intangible benefits that cannot be acquired in private companies. If they are offered compensation packages that offset the loss in such intangibles, these workers will likely leave. Likewise, when privatization occurs, employment conditions and wages may also change among the workers who remain at the state-owned enterprises, and they may obtain more flexible contracts and more favorable wage dispersion.

For society as a whole, however, downsizing operations may increase aggregate output in the medium run through the reallocation of workers
to activities in which they can, presumably, be more productive and through a reduction in the equilibrium level of taxes. This scenario may occur if productivity in the public sector was very low before the reforms and if the potential earnings in the private sector are high.

**Externalities**

Public sector downsizing may affect the rest of an economy not only through its impact on the budget and the allocation of labor, but also through its direct impact on private sector output. An obvious illustration of this productive externality is provided by the one-company town. In such a case, many of the other jobs in the town depend on the employment and wage levels in the state-owned enterprise. The company’s employees are probably the most important customers at the town’s private shops. In the extreme case of a mining town, all the activities of the surrounding population may revolve around the mining company. A drastic employment reduction at the company is therefore likely to depress private sector activity in the town or even transform the town into a ghost town.

Productive externalities involved in downsizing may also occur at a nationwide level. Mass retrenchment programs that affect a substantial fraction of the urban labor force may increase unemployment rates over long periods of time. In some Sub-Saharan African countries where the public sector represents a large share of the modern economy, downsizing may depress economic activity in the short run. Productive externalities of this sort cannot be ruled out in more developed economies either, as suggested by the substantial increase in unemployment rates that followed the massive public sector downsizing program in Argentina.

Externalities like those arising in a one-company town may provide a justification for retaining some redundant workers. Limiting the extent of downsizing certainly entails a cost to the rest of society, which must pay for the redundancies in the form of higher taxes or lower social expenditures. Retrenching redundant workers also entails a cost to the population that surrounds the company and depends on it to sustain economic activity. The optimal extent of downsizing involves a trade-off between these two costs.

**Fiscal flows**

Downsizing operations generate financial gains and costs for the public sector. The first and most obvious financial gain is the cut in the wage bill.
For the government administration, this cut directly reduces budget expenditures. The budgetary impact may be smaller in state-owned enterprises if their wage bills are only partially subsidized by the central budget. A second financial gain results from the reduction in long-term liabilities because separated workers lose all or some of their entitlements to old-age pensions. A third potential gain is the increase in privatization prices when downsizing occurs in preparation for privatization and contributes to the success of privatization. The upfront cost is the amount of the resources spent in compensation, retraining, and other redeployment programs for separated workers.

In the assessment of financial returns, one should focus on the consolidated budget and not merely on the budget of the overstaffed unit (Box 4.3). Examples abound in which the fiscal burden of reform is simply shifted to another government body. For instance, the cost of the social services provided by state-owned enterprises in many transition economies is often paid by taxpayers in the form of explicit or implicit subsidies. Because downsizing reduces the number of the beneficiaries of these services, it also seems to reduce the burden on taxpayers. However, there is no such reduction if downsizing leads to a mere transfer of the services to central or local governments; the state-owned enterprise might be downsized, but overall public sector employment might not

---

**BOX 4.3 Unconsolidated Budgets and Downsizing in Brazil**

The fiscal illusion of downsizing may be particularly severe when downsizing affects entitlements to old-age pensions and other social security benefits. Downsizing in Brazilian states provides an interesting example. A federal government voluntary separation program was launched in 1996; it was the first such program to be implemented within the public administration at the federal level. The program was part of a broader modernization project aimed at increasing efficiency and reducing expenditures in the public sector. The redundancy program was designed and implemented by the Ministry of Federal Administration and Reform of the State, which had identified an excess of public civil servants in almost all areas of the federal administration. Of 327,000 workers in the eligible group, 30,000 were expected to join the redundancy program. In a preliminary assessment of this operation, Carneiro and Gill (1997) show that the savings deriving from the downsizing were substantially smaller for the consolidated government than for the individual states. This is because of the pension benefits granted to the 9,500 displaced workers, which increased the long-term liabilities of the federal government. As a result of the implicit transfer of obligations, budget savings were 15 to 25 percent lower than they appear at first glance.

be, and the need for funds therefore does not disappear. Another example is provided by redeployment programs allowing redundant workers to take other public sector jobs. In this case, the payroll is cut in the restructured public sector unit, but wage bills are inflated elsewhere in the public sector.

DETERMINANTS AND DISTRIBUTIONAL IMPACTS OF WELFARE LOSSES

Downsizing may affect the welfare of other stakeholders in the reform process besides displaced public sector employees. Caterers and providers of services to state agencies and state-owned enterprises, as well as the communities surrounding the enterprises in one-company towns, will likely be affected by public sector retrenchment programs. Impacts among agents providing services to the enterprises are expected to be similar in direction (employment and wages losses) to those experienced by separated workers.

The following concentrates only on welfare impacts among separated workers. The welfare loss a separated public sector worker experiences may be disaggregated into three components. The first is the present value of the resulting change in earnings, including bonuses and other cash benefits. In general, the wage structure in the public sector is different from that in the private sector; wage differentials between public and private unskilled (blue-collar) workers is usually higher than that between public and private skilled (white-collar) workers. Moreover, it may take a long time for some of the separated workers to find new jobs, and earnings may be close to zero during that period. The second component is the present value of the loss in nonwage benefits. Public sector jobs usually provide health coverage and old-age pensions, among other benefits. In most developing countries, the jobs available to separated public sector workers do not carry such benefits. The third component is comprised by other, more intangible losses from separation. For instance, effort and productivity levels on the job tend to be lower in the public sector than in the private sector, whereas job security is almost invariably greater. In particular, intangible benefits such as flexible working hours and maternity leaves are highly valuable for women. The possibility of taking bribes or using government facilities also falls into this category. Formally, the total welfare loss is:

\[ WL = EL + BL + OL \] (4.1)
where $WL$ measures the welfare loss, $EL$ is the present value of the earnings loss, $BL$ is the present value of the loss in nonwage benefits such as old-age pensions, and $OL$ is the loss in other, more intangible benefits.

In preparation for a downsizing operation, it is important to assess the welfare loss separated workers might experience. This assessment may help predict the cost of the downsizing operation in terms of severance payments, and it may also provide a cost benchmark. The welfare loss experienced by retrenched workers will depend on the observable characteristics the workers possess. These characteristics include salaries and seniority in the public sector, the two variables most commonly used when designing severance compensation (the most common rule of thumb). But they also include gender, age, education, job level, geographic location, and other characteristics.

Table 4.2, taken from Rama (1999), summarizes findings of several studies on the determinants of welfare losses and earnings losses from job displacements in developing countries and transition economies. It reports the signs of the impact of worker characteristics on the welfare and earnings losses among the workers. In the table, a “+” sign denotes a statistically significant positive association between the losses and specific worker characteristics; the opposite holds for the “−” sign, while “0” denotes nonsignificant relationships, and a “?” denotes changes in sign across specifications.

Several regularities emerge from the table. First, it appears that the wage level in the public sector is a poor predictor of welfare losses, at least as long as other observable characteristics of workers are taken into account. Second, with the exception of Egypt, where government hiring and compensation policies strongly distort the payoffs for schooling, the loss from displacement is usually smaller as the level of educational attainment of a worker rises. Third, while higher seniority in a public sector job may lead to larger losses from displacement, there is no clear link between total work experience and displacement losses. Fourth, women workers and workers with bigger families may suffer more from displacement. These distributional impacts are now discussed in more detail.

**Education and specific skills**

Traditional rules of thumb for compensation do not consider education in setting the amount of severance payments. However, education is an important predictor of earnings. In fact, it is an empirical regularity that, in most developing countries, the more educated the individual, the more he or she will be able to earn. If this is the case, the welfare losses of the
### TABLE 4.2. Determinants of Losses from Job Separations

<table>
<thead>
<tr>
<th>Worker characteristic</th>
<th>Welfare loss</th>
<th></th>
<th></th>
<th></th>
<th>Earnings loss</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Argentina, white-collar employees</td>
<td>Ecuador, Central Bank employees</td>
<td>Egypt, public sector workers</td>
<td>Turkey, cement and oil workers</td>
<td>Ecuador, Central Bank employees</td>
<td>Ghana, civil servants</td>
<td>Slovenia, formal labor force</td>
<td>Turkey, cement and oil workers</td>
<td></td>
</tr>
<tr>
<td>Public sector wage</td>
<td>+(a)</td>
<td>0</td>
<td>n.a.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>n.a.</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Seniority</td>
<td>n.a.</td>
<td>+</td>
<td>?</td>
<td>0</td>
<td>+</td>
<td>0</td>
<td>+(b)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>0</td>
<td>–</td>
<td>+</td>
<td>–</td>
<td>–</td>
<td>0</td>
<td>0</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Experience</td>
<td>?</td>
<td>+</td>
<td>–</td>
<td>+</td>
<td>0</td>
<td>+</td>
<td>0</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Woman</td>
<td>n.a</td>
<td>0</td>
<td>+</td>
<td>0</td>
<td>+</td>
<td>0</td>
<td>n.a.</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>–</td>
<td>0</td>
<td>n.a.</td>
<td>0</td>
<td>+</td>
<td>0</td>
<td>n.a.</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Number of dependents</td>
<td>?</td>
<td>+</td>
<td>n.a.</td>
<td>+</td>
<td>0</td>
<td>0</td>
<td>n.a.</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>


**Note:** Statistically significant signs are indicated by + or −, while 0 indicates a nonsignificant coefficient, and ? indicates a change in sign across specifications or groups of workers. When the variable has not been included in the analysis, n.a. (not applicable) is reported.

a. The coefficient is positive as a result of an implicit restriction imposed in the selected specification.

b. Almost all work experience was under the self-management system that characterized Yugoslavia until the late 1980s.
more educated will typically be lower than the welfare losses of the less educated. Evidence provided by several studies suggests that, indeed, welfare losses are higher among less educated workers; this has been the case in Ecuador, Guinea-Bissau, and Turkey. Assessing the welfare impacts of downsizing in the cement and oil sectors in Turkey, Tansel (1997) reports that the probability of a similar or better current situation with respect to a predismissal status—a self-rated welfare measure—increased significantly with the level of education. Additionally, Tansel finds that earnings losses were smaller among the better educated; in particular, general high school graduates experienced the smallest losses, while the largest losses were experienced by middle school graduates. In the case of Ecuador, Rama and MacIsaac (1999) use an implicit welfare measure of the losses among workers after dismissal from the Central Bank. They find that more well educated employees fared better than did other retrenched bank employees; if their estimates are interpreted literally, the implicit welfare loss decreased by roughly 15 percent for each additional year of schooling. Chong and Rama (1998) also find that welfare losses are higher among less educated public sector workers in Guinea-Bissau. In the case of Egypt, in contrast, Assaad (1999) reports that welfare losses among dismissed workers at state-owned enterprises tend to be significantly higher among individuals with secondary and postsecondary education than among workers with lower levels of education.

Despite the specific relationship between education and welfare losses by country, it is clear that variations in welfare across education groups might be important, but that this is not considered in traditional rules of thumb. As Assaad points out:

> The significant difference in displacement losses among workers at different levels of education has important implications for the design of severance pay programs. If the same package of benefits is offered to all workers to achieve a certain rate of exit, the likely outcome is that all level-one workers, who tend to have lower losses, will exit first, leading to a highly distorted occupational structure. Some control can be achieved over the composition of the exiting workers by setting up separate programs for each level of education. (Assaad 1999, 133)

Besides education, other skills may be important, too. Public sector workers and workers in state-owned enterprises accumulate specific skills that may not be easily transferable to the private sector, where these skills may show low returns or are not rewarded at all. Workers may acquire and develop highly specific skills to perform tasks in the public sector that may not be standard elsewhere. Thus, after dismissal, workers with
highly specific skills stand to lose more than do other workers. An example is production-line workers versus managers of state-owned enterprises. The technologies used in the private sector may not be the same as those used in state enterprises; thus, individuals who once worked on a state enterprise production line and acquired specific skills nontransferable to the private sector would likely experience longer unemployment spells after dismissal or may not be able even to find similar jobs in the private sector. In any of these situations, an earnings loss may be expected. On the other hand, managerial skills are general enough, and white-collar employees are likely to find similar jobs in the private sector even if the job level is lower or if the dismissed individuals are obliged to spend time among the unemployed before obtaining private sector jobs. Some evidence on these issues is reported by Tansel (1997) for workers in state-owned enterprises in the cement and oil sectors in Turkey. Tansel finds that, in postdismissal earnings regressions, years of experience at the enterprises are only marginally statistically significant or not statistically significant at all. This may suggest that the skills acquired in the public sector were not easily transferable to the private sector. More evidence on this issue is provided by Rama and MacIsaac (1999) on workers dismissed from the Central Bank in Ecuador, where the earnings losses after dismissal increased with years of tenure at the bank, but did not increase with work experience outside the bank. Rama and MacIsaac argue that longer careers at the Central Bank may be associated with higher investments in specific skills that have low returns in the private sector.

Geographic location

Geographic location and place of residence may also play an important role in terms of the differential distributional impacts of retrenchment programs. In particular, dismissed public sector workers and workers in state-owned enterprises in small towns or in rural areas are expected to lose more after separation than other workers. Local labor market conditions could be tighter—a situation involving low unemployment and many vacancies—in small towns than in capital cities or other medium-to-large cities, where more employment opportunities may be available for both blue- and white-collar workers. In several developing countries, private firms—good examples are manufacturing plants and seaport facilities—are concentrated in medium-to-large cities and especially in capital cities. Given that the typical rule of thumb would equally compensate dismissed workers from large cities and small or rural towns,
retrenched workers in the latter group stand to lose more. However, this might not always be the case since, in smaller towns, the cost of living is probably much lower. In any case, both aspects, the prospects of getting a paid job and the costs of living, should be taken into consideration.

Analyzing the case of Guinea-Bissau, Chong and Rama (1998) find that potential earnings in the private sector are higher in Bissau than outside the city. They suggest that a well-tailored severance package should be more generous in remote areas, where job alternatives might be limited, than in the capital city. Similar differential distributional impacts in terms of geographic location are reported by Assaad (1999) in the case of Egypt. Assaad simulates severance packages that could be offered to workers in state-owned enterprises using alternative indexation schemes rather than the traditional rule of thumb. He finds that simulated acceptance rates would be higher in the Alexandria and Suez Canal regions and, to a lesser extent, rural Lower Egypt. In contrast, simulated acceptance rates would be disproportionately low in Upper Egypt, a region with poor private sector prospects.

**Gender**

Studies of public sector downsizing impacts summarized in Table 4.2 present direct evidence of the relative loss in incomes for women versus men. In both Ecuador and Ghana, women were shown to suffer greater earnings losses even after controlling for worker characteristics in a regression analysis. In Ecuador, a woman’s loss in earnings was 30 percentage points higher than the loss of a comparable male colleague. In contrast, in Slovenia, women suffered a smaller loss than men, and, in Turkey, women’s losses were the same as men’s. As Table 4.2 illustrates, the total welfare loss, including loss of benefits, is greater among women than among men in Egypt (as the “+” sign in the third column in the “Woman” row indicates) and about the same in Ecuador and Turkey (as the “0” sign in the second and fourth columns in the “Woman” row shows). In Egypt, the total welfare loss among women was 85 percent higher than the loss among men.

There are at least three reasons one should care whether women are more negatively affected than men by public sector downsizing programs. First, the income of women workers is important to the welfare of households. Men workers tend to contribute more to total household incomes than do women workers, but the relevant issue is the incomes lost. As shown by Appleton, Hoddinott, and Krishnan (1999), Assaad (1999), and Rama (2001), laid-off women public sector employees will, on average,
spend more time unemployed, and the gap between the wages they earned in their public sector jobs versus the wages in their private sector jobs will be greater. Additionally, studies from a wide set of countries indicate that women’s and men’s relative contributions to household incomes affect spending patterns. These studies show that increasing a woman’s share of income in the household (controlling for total household income) significantly increases the share of the household budget allocated to children’s education, health care, and nutrition-related expenditures.

Second, disproportionate layoffs of women, coupled with private sector discrimination, may result in an inefficient use of the labor force in the economy as a whole. In Egypt, economic reforms eliminating guaranteed civil service employment for graduates of secondary and higher education institutions have been found to have such an effect. While the educated men who were eligible for guaranteed public sector employment were generally able to find jobs in the private sector, their women counterparts were obliged to move into very low-productivity subsistence agriculture or otherwise leave the labor market.7

Third, disproportionate layoffs of women employees may exacerbate existing shortages of women in certain departments. In the case of agricultural extension agents or health care professionals, for example, it may be that women are needed to provide services to women farmers or women patients. Conversely, there may be few men in positions (for example, elementary school teachers) where it may be socially desirable to maintain a balance between men and women.

METHODS TO ASSESS DOWNSIZING IMPACTS ON WORKER WELFARE

As a result of downsizing, some displaced workers may face losses in earnings and welfare (losses in earnings, plus losses in nonwage and intangible benefits) following separation, while others may receive gains. This poses the problem of determining a severance payment to help compensate those who stand to lose, while avoiding overcompensation. This section discusses three approaches for assessing and measuring worker losses or gains, the data requirements for performing this sort of analysis, and a procedure for tailoring a separation compensation package.

Methods

In what follows, a list of three approaches is presented that may help in assessing the impacts of downsizing on worker welfare losses and in
measuring these losses. For practical purposes, the first two approaches cannot be used in preparation for downsizing operations, but are nonetheless useful tools for analyzing ex post welfare impacts among dismissed workers and for generating insights on prospective operations.

- The “before and after” methodology. The first strategy consists of interviewing former public sector workers one year after separation (for example) and asking them to evaluate any changes in their well-being. The interviews may be carried out according to subjective or objective criteria. In the subjective evaluation of well-being, the separated workers would be asked to assess their current well-being with respect to the predismissal situation. The change in well-being might be measured using a discrete variable indicating whether postdismissal well-being is much better, better, about the same, less, or much less than predismissal well-being. In the objective evaluation of well-being, the workers would be asked to report pre- and postdismissal earnings. The change in well-being could then be computed as the percent difference between pre- and postdismissal earnings. In both cases, these indicators are regressed against predismissal earnings and tenure in the public sector, as well as other observable worker characteristics, such as age, education, gender, marital status, and the like. This methodology has been used by Rama and MacIsaac (1999) to study welfare losses among dismissed civil servants at the Central Bank of Ecuador and by Tansel (1997) to assess welfare losses among dismissed workers in state-owned enterprises in Turkey.

- The “stayers and leavers” methodology. A second empirical strategy relies on the welfare losses predicted by public sector workers before the downsizing. The idea is to compare the workers who accepted separation offers with those who rejected them. Those who accepted the offers expected that there would be a net welfare gain from separation, whereas those who rejected the offers expected that there would be a net welfare loss from separation. The probability of acceptance may therefore be estimated as a function of all the individual characteristics of the workers and the severance payments the workers were offered. This is then used to infer the amount of severance payments that would have made each worker indifferent about accepting or rejecting an offer. That amount is an indicator of the welfare loss or gain expected by each worker. The “stayers and leavers” methodology has been used by Robbins, Gonzales, and Menendez (1996) to assess the welfare change after dismissal among workers in seven state-owned enterprises in Argentina.
The “in versus out” methodology. This strategy compares the present value of earnings among workers inside and outside the public sector. Typically, the comparison shows that some public sector workers earn less over their working lives than similar workers in the private sector. If the public sector workers do not quit voluntarily, it is probably because they derive other benefits from their jobs. The gap in earnings observed for the most disadvantaged group of public sector workers may thus be used to infer the value of nonwage and other intangible benefits involved in public sector jobs, such as job security, health insurance coverage, in-kind payments, and other fringe benefits, or even low job-effort (productivity) requirements. For less disadvantaged workers, it is assumed that the loss of nonwage and intangible benefits is proportional to the public sector salary. Relying on the hypothesis that a stable relationship exists between the welfare losses and the earnings losses related to displacement, studies addressing the latter can be expected to provide information on the former. From the previous discussion, it may be inferred that, if a separated worker earns less in the private sector or the informal sector once nonwage and intangible benefits are accounted for, the resulting net present value of the difference between public sector and private sector (“in and out”) earnings and benefits will be positive, and a welfare loss will have occurred. Similarly, if the separated worker earns more in the private or the informal sector, the resulting “in and out” net present value of the difference in earnings and benefits will be negative, and, in this case, a net welfare gain will have occurred. The “in versus out” method was initially proposed by Fiszbein (1994), who uses a forward-looking formula to assess the “just right” severance package to compensate dismissed workers for potential earnings losses. Assaad (1999) refined the forward-looking approach by taking into account both tangible and intangible losses. Many workers in public or state-owned enterprises might be able to earn more in the private sector, but, despite this, they prefer to stay at their public sector jobs; this means that these other, intangible benefits are highly valued. Chong and Rama (1998) build upon the work of Fiszbein and Assaad to propose additional methodological refinements, including the appropriate time spans that should be considered in computing present discounted values and the significance of measurement error problems in the calculation of intangible benefits. The “in versus out” methodology has been used by Assaad (1999) on Egypt, Chong and Rama (1998) on Guinea-Bissau, Fiszbein (1994) on Sri Lanka, and Rama (2001) on Vietnam.
Data sources

Before a downsizing operation is implemented, the “in versus out” methodology may be applied. After the operation, the “before and after” or the “stayers versus leavers” methodologies may be applied. Most of the information required is similar, and several sources of information may be used. The analysis will require data on earnings; it is important to use annual earnings instead of daily or weekly earnings, especially in developing countries, because many jobs in the private sector are casual or seasonal, such as in the case of self-employed or informal workers. Thus, total earnings during a year may be low despite occasionally high daily or weekly totals. In addition, annual earnings figures should include earnings from primary and secondary jobs where applicable because private sector workers frequently hold secondary occupations as additional sources of income. Other welfare measures could be useful as well, such as household consumption levels or the amount of the old-age pensions to which workers are entitled. Information on the individual characteristics of workers will also be required, such as age, education, gender, tenure or years of work experience, region of residence (urban versus rural, city versus town), and marital status, among others.

A first source of information useful for an assessment of the welfare implications of downsizing is administrative data on the public sector, such as public employment censuses or payrolls. Ad hoc household surveys may be particularly relevant as a supplement to these data given that the surveys may be specifically designed to assess the welfare impacts of downsizing on dismissed workers. Other individual or household surveys typically carried out in most countries, such as labor force surveys, household-expenditure surveys, or Living Standards Measurement Studies, might also serve as good sources of information.

Designing a separation package

Tailoring a separation compensation package may help minimize the welfare losses of dismissed workers and reduce the distributional impacts through education, gender, region of residence, or other worker characteristics and may also help reduce the total cost associated with a voluntary separation scheme. In a typical downsizing operation, the amount of compensation displaced workers receive is based on a rule of thumb involving their salaries and perhaps their seniority in the public sector. The implicit assumption is that their welfare losses from displacement can be accurately predicted based only on these two observable charac-
teristics of the workers. However, such rules of thumb might generate 
two types of problems: (1) problems with the resulting composition of 
dismissed and retained workers; and (2) under- or overcompensation. 
A better rule might be obtained if other observable characteristics of 
workers, such as education and gender, for instance, were considered 
as well. Fewer workers would then be undercompensated or overcom-
pensated. Moreover, tailoring a severance package to obtain the “just 
right” amount of compensation may help set the appropriate incentives 
and reduce the adverse selection problem. In sum, tailored compensation 
would not only contribute to the fairness of the downsizing process, but 
it would also reduce the total cost of downsizing in the context of voluntary 
separations, in which overcompensation is more likely to occur than 
undercompensation.

A five-step procedure developed through the World Bank Public 
Sector Retrenchment Project—see Chong and Rama (1998) and Rama 
(1999)—can be used to create compensation or severance payment pack-
ages in preparation for a downsizing operation. This procedure relies on 
the “in versus out” methodology used to estimate losses from displace-
ment and may be applied before any retrenchment has taken place.

**First step: earnings equations**

The first step in the proposed five-step procedure is to estimate an annual 
earnings function for workers who are outside the public sector. The data 
should come from individual records in labor force surveys or living stan-
dards studies. A regression specification of an earnings function is given by:

\[
W = \alpha_0 + \alpha_1 X_1 + K + \alpha_k X_k + \epsilon
\]  

(4.2)

The variables on the right-hand side include individual characteris-
tics for private sector workers \((X_i)\), which are also observable for work-
ers who are in the public sector. Ideally, the list of variables should be 
eactly the same as a list gathered from the records the public sector 
maintains on its own employees. The left-hand variable \((W)\) measures 
the labor earnings of all individuals who work outside the public sector, 
including the self-employed and workers in the informal sector. The 
goal of this first step is to predict the potential earnings of the public sec-
tor workers who are bound to be separated, using the coefficients esti-
ated from the previous regression \((\hat{\alpha}_i)\) and the characteristics of public 
sector workers \((\tilde{X}_i)\):

\[
E = \hat{\alpha}_0 + \hat{\alpha}_1 \tilde{X}_1 + K + \hat{\alpha}_k \tilde{X}_k
\]  

(4.3)
These predicted earnings represent the potential earnings that dismissed workers would earn outside the public sector after separation if their earnings were calculated according to private sector valuation standards for the selected worker characteristics.

**Second step: present value of earnings loss (EL)**

The second step involves comparing each separated worker’s public sector salary with the potential earnings estimated in Step 1. The difference between the two is discounted over the duration of the contract the worker would have in the public sector. In most cases, this duration is the number of years to retirement. Thus, the second step is to calculate the present value of the earnings loss, $EL$, that public sector workers will experience after they are separated. This may be formalized as:

$$EL = \sum_r \frac{S_t - E_t}{(1 + r)^t}$$  \hspace{1cm} (4.4)

where $r$ is a discount rate, and the sum refers to all the years until retirement age or to the expected length of the worker’s contractual relationship. Data on the public sector salary $S$ and on the number of years to retirement should be obtained from public sector records. Data on earnings after separation ($E$) are taken from Step 1.

**Third step: loss in benefits (BL)**

The third step is to assess the loss in benefits. In many developing countries, the most important component of this loss is old-age pensions. An actuarial calculation of the present value of forgone old-age benefits may be used to quantify this loss. As a simpler alternative, the calculation may rely on the present value of past contributions to the social security system, plus accrued interest, where applicable.

Whatever the chosen approach, experience with downsizing suggests that the loss in benefits needs to be dealt with separately. Explicitly canceling outstanding social security obligations is important to avoid misunderstandings (or opportunistic behavior) that can eventually lead to legal and political wrestling.

**Fourth step: loss in intangibles (OL)**

The fourth step is to evaluate the loss in other, more intangible benefits. Once estimates of the loss in earnings and the loss in benefits have been computed, it is possible to identify whether there are groups of public sec-
tor workers for whom the average sum of the earnings and benefits losses is substantial. If these workers stay in the public sector, it is because they derive some other benefits from their jobs. These other benefits may be estimated based on the absolute value of the earnings loss, plus the benefits loss. The monetary value of these other benefits is at least equal to the sum of the earnings and benefits losses. The ratio between this monetary value and the public sector salaries of the workers may be used to infer the intangible benefits enjoyed by other, less disadvantaged public sector workers.

**Fifth step: a compensation formula**

Step 5 involves the development of a simple formula to calculate compensation based on a few observable characteristics of public sector workers. It is assumed that losses related to old-age pensions will be settled separately. The problem thus becomes the identification of the minimum information necessary to allow one to predict the losses in earnings and intangible benefits in a convenient and noncontroversial way. This is important because making compensations contingent on individual characteristics such as gender or ethnicity would not be legally or socially admissible in some countries and because other characteristics, such as marital status or the number of dependents, may be subject to manipulation.

The compensation formula developed in Step 5 differs from the typical rules of thumb used to design severance payment packages in two important ways. First, the information required may or may not include data on salaries and seniority in the public sector, depending on how useful these two variables are in predicting the losses in earnings and intangible benefits. Second, the coefficients used to multiply these two variables, as well as the other variables in the relevant data set, are not arbitrary, but are the coefficients of a regression explaining the predicted losses in earnings and intangible benefits as a function of the observable characteristics of public sector workers.

**The downsizing options simulation exercise**

The Downsizing Options Simulation Exercise is an Excel application for assessing the consequences of various downsizing strategies. It uses the five steps discussed above to estimate the value of a compensation package that would make some of the workers in state-owned enterprises accept a voluntary departure scheme. The tool has been used in preparation for downsizing operations in countries such as Guinea-Bissau, Guyana, and Vietnam, among others.
The tool relies on individual records from official databases and household surveys to construct a small-scale public sector, including all workers whose main jobs are in government administration or state-owned enterprises, depending on the focus of the operations. It estimates the value of the total loss from separations (earnings and intangible benefits) and uses this information to classify each public sector worker into one of two groups: those who would accept the offers (potential leavers) and those who would not accept the offers (potential stayers), depending on the combination of early retirement and voluntary separation offers made. This classification helps to identify the “right” voluntary separation package that could serve as a cost benchmark for downsizing options involving involuntary separations. The tool also calculates the financial and economic returns to the operations based on various assumptions.

Given that men and women employees may experience differentiated welfare impacts from job separations, a gender-sensitive version of the tool that has been designed for Vietnam is also publicly available. The modified tool emphasizes the gender dimension. Specifically, it uses separate earnings functions for men and women in estimating the alternative earnings of separated public sector workers. Thus, the tool does not assume the same returns to skills and other observable characteristics for men and women workers. It also estimates the value of intangible benefits separately for men and women and produces summary statistics disaggregated by gender.

**THREATS AND RISKS**

There are several potential threats and risks that may prevent financial and economic returns to downsizing from materializing.

**Overcompensation**

Overcompensation is a potential bias of downsizing operations. To some extent, this bias is inevitable if the downsizing is based on voluntary separations. Workers who are offered compensations lower than the welfare losses they may experience will tend to prefer to stay in the public sector. Meanwhile, workers who are offered compensations that are greater than what they stand to lose will tend to accept the offers and leave. Thus, errors involving excessively low compensations have no serious practical implications for the public sector (though the compensations may be ineffective), whereas errors involving excessively high compensations
may have serious financial and economic implications. Ill-designed compensation mechanisms exacerbate this second type of error. The most typical rule of thumb used to compensate workers is actually one such ill-designed mechanism. Usually, severance payments are set as a multiple of the last public sector wages. Applying this rule of thumb to compensate displaced public sector workers frequently creates problems. Those at the top of the hierarchy (say, professionals) are offered much better deals than those at the bottom (say, janitors). But those at the top have less to lose in relative terms if they leave. Because of the egalitarian nature of the public sector, their wages are usually below the corresponding private sector wages, while the opposite is true for those at the bottom of the hierarchy. A severance payment offer based on public sector wages would therefore overcompensate those at the top of the hierarchy, but fail to encourage the departure of those at the bottom although redundancies tend to be more prevalent at the bottom. Studies show that a better tailoring of severance payment offers could reduce the total cost of downsizing by 20 percent or more.

In addition, compensation offers may contradict the broader objectives of economic policy reform in developing countries. Many reform efforts supported by multilateral organizations and donor countries are aimed at reorienting public expenditures toward the neediest. Some would claim that there is a conflict between supporting such efforts to tilt the budgetary process in favor of the poor and lending generous amounts of money to finance severance payment packages for public sector workers, who usually are not poor. Although the decision to offer severance payments should be made on a case-by-case basis, there is clearly no justification for overcompensating displaced workers.

**Adverse selection and rehiring**

Adverse selection can dramatically affect the economic returns to downsizing without modifying the financial returns very much. If the retrenched workers are genuinely redundant, their productivity in the public sector is probably low. However, if the retrenched workers are essential for the operation of a unit producing a socially valuable service, productivity in the public sector may actually be quite large. The contributions of good civil servants to society may be much greater than the cost in wages. If they leave, public sector downsizing may show negative economic returns in spite of any positive (and possibly high) financial returns. Poorly tailored downsizing operations may result in substantial rehiring of previously displaced civil servants and public workers, as reported by Halti...
Singh (1999). As a consequence the financial gains from the operation disappear; compensation packages become “golden handshakes,” and overstaffing is not corrected.

**Externalities**

When confronted with productive externalities and other externalities such as those arising in the case of one-company towns, the optimal policy decision might involve a trade-off between two costs. First, there is the financial cost of keeping these companies in operation, which entails a cost for the rest of society because any company deficits translate into higher taxes or lower social expenditures. Second, shutting down or significantly downsizing the operations of such companies entails a cost for nearby populations that depend on the companies to sustain local economic activity. Unfortunately, relatively little is known about the magnitude of the costs to surrounding populations. As in other areas of public policy, externalities are more difficult to quantify than deficits. In the absence of information about the impact of the company’s size on the town’s earnings, decisions regarding labor retrenchment could be misguided.

**Other distortions and imperfections**

The initial situation of a public sector unit that is to be downsized is typically characterized by distortions and imperfections. Overstaffing is only one among these problems. Public sector agencies and state-owned enterprises are likely to use pay scales that are distorted relative to those in the private sector. They are also financed through taxes (at least partially in the case of enterprises), and this creates distortions and reduces aggregate output. Downsizing operations usually tackle only the overstaffing distortions. If other distortions remain after the downsizing, the downsizing operations may not succeed in improving economic efficiency.

**CONCLUSIONS**

Public sector downsizing operations are designed to reduce the size (workforce) of public agencies or state-owned enterprises in an attempt to improve the efficiency of the public sector. The operations are usually part of an overall effort to increase economic growth and cut financial deficits in the public sector. Overstaffing, burgeoning payrolls, and inefficiencies are still evident in the public sector and in state-owned enter-
prises in many developing countries. Downsizing operations therefore represent tangible policy alternatives. However, downsizing should be carefully assessed before implementation to avoid unexpected problems.

A PSIA assessment of downsizing operations must identify the stakeholders involved in the reform. Usually, these stakeholders have heterogeneous interests in and reactions to a reform process and, depending on their political power, may interfere with the process and compromise the outcome. The welfare of dismissed employees in the public sector and in state-owned enterprises is directly affected by retrenchment programs. These workers constitute the most visible and most well organized group of stakeholders in this kind of reform; they represent hundreds of thousands of votes and can easily attract the attention of the media and mobilize large numbers of citizens. The state is also an important stakeholder, with direct control over the operations. However, its stake in and responses to the reform will depend on the specific central or local tier of government involved. Other stakeholders whose welfare might be directly affected, but whose political power is likely weaker than that of the public sector employees include people in communities surrounding state-owned enterprises and caterers and providers of services to public agencies and state-owned enterprises. Taxpayers, taken as a group, multilateral organizations, and donor countries are also among the stakeholders in a downsizing operation.

This chapter concentrates on assessing the welfare losses among dismissed workers. These welfare losses consist of the present value of the resulting change in earnings (including bonuses and other cash benefits), the present value of the losses in nonwage benefits (such as health coverage and old-age pensions), and other intangible losses from separation (such as reduced job security or less effort or productivity on the job). Downsizing may generate differential distributional impacts. Traditional rules of thumb used to compute severance compensations take into account only current wages and years of tenure in the public sector. Changes in welfare after dismissal are related to other observable characteristics that may serve as the basis for the design of a “just right” compensation package. In particular, evidence suggests that a well-tailored downsizing operation may consider the education, geographic location, and gender of workers. Various studies also show that the “just right” severance compensation package outperforms more traditional rules of thumb on the grounds of both costs and fairness. To help assess the consequences of using various downsizing strategies to compute a severance package, the chapter refers the reader to the Downsizing Options Simulation Exercise, an Excel-based application that can be found on the “Shrinking Smartly” Web page of the
World Bank. This analytical tool has been used in preparation for downsizing operations in Guinea-Bissau, Guyana, and Vietnam, among other countries.

A PSIA assessment should also consider the differences between the financial and economic returns to downsizing operations. Financial returns are calculated according to the present value of the difference between the payroll savings and the direct costs of the operations, such as the total amount of severance payments, the administrative costs, and other costs associated with safety net services provided to retrenched workers. In most cases, financial returns should be positive; however, even if this is so, the economic returns may be negative. Economic returns are much harder to assess. An indirect measure is the percentage of rehired workers. Rehires indicate that downsizing operations have been poorly handled and may indicate that some employees essential to the public agencies or state-owned enterprises were incorrectly dismissed or, worse, that some workers who had no intention of leaving in the first place were able to cash in through golden handshakes. Other factors may also cause differences in financial and economic returns, such as distorted public sector pay scales, distortionary taxes, or the presence of externalities as in the case of one-company towns.

A last word on the risks and threats involved in this type of operation. Retrenchment programs usually face political opposition. For this reason, voluntary or similar separation schemes are often preferred to involuntary schemes. However, the risks of ill-designed operations may cause the reform process to derail. In a PSIA, these risks should also be addressed. Some important risk factors that should be taken into account in the design of downsizing operations are the problems of overcompensation and adverse selection and externalities and distortions other than overstaffing.

NOTES

2. See, for example, Vickers and Yarrow (1991) and World Bank (1995).
3. See Galal et al. (1994).
6. See the discussion in Rama and Scott (1999).
8. The tool can be downloaded from the “Shrinking Smartly” Web page of the World Bank. (At http://www.worldbank.org/, insert “Shrinking Smartly” into the search cell and click “GO.”)
9. Gender-sensitive versions of the tool have also been designed for Peru and Yemen.
10. For surveys of typical rules of thumb, see Nunberg (1994) and Kikeri (1997).

BIBLIOGRAPHY


