

# Public Sector Downsizing: An Introduction

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*Authorities throughout the developing world are turning to downsizing in an effort to reduce budget deficits and address the inefficiencies engendered by state-led development strategies. Because large-scale involuntary dismissals are often politically difficult, a voluntary approach to reductions in public sector employment is increasingly popular among developing-country governments, multilateral organizations, and donor countries. This article (and, more generally, the research project on Public Sector Retrenchment) attempts to sketch a protocol for public sector downsizing that takes into account the costs and benefits for the workers and the economy.*

*After reviewing the international experience with downsizing, the article addresses five questions: how to identify the redundant workers, how to predict their losses from separation, how to design compensation and assistance packages, how to assess the financial and economic returns to downsizing, and how to deal with downsizing in one-company towns. Based on the answers to these questions, a decision tree is proposed.*

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Public sector downsizing is not a final goal of economic policy, but economic reforms may require mass layoffs. State-led development strategies left a legacy of bloated bureaucracies and overstaffed public enterprises. Severe labor redundancies characterize transition economies, where the shift from plan to market requires millions of workers to be relocated out of the public sector. In Latin America and South Asia, decades of protective policies led to the proliferation of white elephants and sick industries. All over the world, technological progress is making natural monopolies disappear, thus confronting formerly somnolent utilities with harsh competition. Increasingly, authorities are correcting the employment excesses from past patronage and cronyism as more modern and democratic ways replace traditional and authoritarian ones.

The extent of labor redundancies could make politically unfeasible any serious downsizing, especially based on involuntary dismissals. Hence, a voluntary approach to reductions in public sector employment is increasingly popular among developing-country governments, multilateral organizations, and donor countries. The voluntary approach offers severance pay to encourage the redundant workers to quit, thus overcoming their resistance to downsizing, restructuring, and privatization. In many developing countries, buying out the redundant work-

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ers is in fact the only way to bypass the legal obstacles to the dismissal of public sector employees. In addition, it seems fair to compensate those who may suffer from a change in the rules of the game. In this respect, severance pay resembles the lump-sum transfers that characterize textbook analyses of economic policy. If public sector downsizing increases efficiency, it should be possible to compensate redundant workers in the public sector and still make a net gain for the economy. Public sector downsizing could thus qualify as a Pareto-optimal reform.

Until recently, one of the main obstacles to the implementation of the voluntary approach to public sector downsizing was its cost. Sometimes downsizing requires the relocation of hundreds of thousands of workers to the private sector, with the average compensation, retraining, and redeployment package amounting to several thousand dollars per worker. A single downsizing operation may therefore cost hundreds of millions of dollars. However, some of the countries that most desperately need public sector downsizing are strapped for cash. Recent changes in the attitude of multilateral organizations toward mass retrenchment have significantly softened this constraint. In March 1996 the World Bank modified its operational rules to allow lending for severance pay aimed at restructuring the public sector. The International Monetary Fund also favors public sector downsizing because it could allow a more durable reduction in government expenditures than cuts in the wages of civil servants, which are not sustainable in the long run. And regional organizations such as the Inter-American Development Bank will lend for severance pay. As a result, many developing countries and transition economies have plans for public sector downsizing in preparation or already in execution.

While the gains from downsizing are potentially large, the chances of mishandling it are considerable too. It is quite obvious that many workers in the public sectors of developing countries contribute little to aggregate output or welfare, if anything at all. The issue is whether the use of severance pay packages really helps to relocate these workers to more productive activities. The frequently observed "revolving door" syndrome, whereby separated workers are subsequently rehired, suggests that some downsizing operations lead to the departure of the few who make the public sector work.

The amount and nature of the assistance provided to separated workers may be inadequate. The authorities usually set up severance pay packages in an arbitrary way. Typically, they use a rule of thumb involving salary and perhaps seniority in the public sector (see Nunberg 1994, Kikeri 1997, and Kouamé 1997). For instance, separated workers receive two years of salary, one month of salary per year of service, or some other combination of these two variables. But the resulting amount may bear little relation to the loss these workers experience as a result of their separation. Some of them clearly suffer, whereas others become net winners. Moreover, the authorities may spend large amounts of resources on ineffective retraining and redeployment programs. Thus, in practice, public sector downsizing may diverge a lot from the envisioned Pareto optimality.

Assessing the returns to downsizing operations is also difficult. The typical assessment compares the savings in terms of public sector wages with the cost in terms of severance pay packages, retraining, and redeployment programs. Overstaffing is only one among several distortions characterizing the public sector, however, so the analysis should not use financial returns to measure economic returns. Public sector wages usually differ from private sector wages and therefore are not a good indicator of the opportunity cost of labor. Furthermore, the analysis should not ignore the externalities from mass retrenchment. The most obvious externalities arise in the context of one-company towns, which may easily become ghost towns after downsizing takes place. Public sector downsizing leads to fiscal externalities, too, because it reduces the equilibrium level of government expenditures and hence the burden from distortionary taxes.

This symposium issue provides a conceptual framework for analyzing the effects of downsizing operations. In addition to this introduction, the issue contains six articles produced for a recently completed World Bank research project on Public Sector Retrenchment and Efficient Compensation Schemes.<sup>1</sup> This introduction presents the common thread underlying those articles, as well as other articles prepared for the project but not included in this issue. It also draws lessons from other studies on public sector downsizing, including the studies by Svejnar and Terrell (1991), Diwan (1994), Fiszbein (1994), Kikeri (1997), and Lindauer and Nunberg (1994). Most of the previous research dealt with relatively narrow downsizing issues. The Public Sector Retrenchment project represents the first systematic attempt to address downsizing from a variety of perspectives, ranging from public economics to labor economics to mechanism design.

## I. A MIXED RECORD

The World Bank indirectly supported more than 40 attempts to downsize the public sector in developing countries between early 1991 and late 1993. The units targeted included government administration, state-owned enterprises, and, in the context of post-conflict demobilization, the military. Haltiwanger and Singh (this issue) review these downsizing operations. The average downsizing operation led to the separation of 125,000 workers at a cost of \$400 million, including \$87 million in severance pay. The downsizing operations varied considerably. For instance, the smallest one affected 247 public sector workers, compared with more than 1.6 million workers for the largest one.

Downsizing reduces public sector expenditures, particularly the public sector wage bill. When the present value of this reduction is higher than the up-front cost in terms of severance pay and enhanced safety nets, downsizing has positive financial returns. A more precise assessment has to be based on economic returns. Downsizing also reallocates workers across sectors. When aggregate wel-

1. For more information see <http://www.worldbank.org/research/projects/downsize>. A complete version of most of the research papers produced for the project can be downloaded from this Web site.

fare increases as a result of this reallocation, downsizing has positive economic returns.

Haltiwanger and Singh evaluate the financial returns of 15 of the surveyed operations based on the number of years it would take to recover their direct financial costs, using a 10 percent annual discount rate. This indicator is called the break-even period. Measured by this indicator, the downsizing operations performed remarkably well. The average break-even period was two years and four months, and it exceeded four years in only one case. Few investment projects display such high financial returns.

As an indirect measure of economic returns, Haltiwanger and Singh calculate the percentage of the displaced workers who were subsequently rehired by the restructured units. Rehires indicate a poorly handled downsizing process. In the best case, they imply that workers who were essential to the operation of the restructured units 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 golden handshakes.

Haltiwanger and Singh found rehiring in 40 percent of the operations for which the required information was available. More than 10 percent of the separated workers were rehired in half of these cases. If anything, these results underestimate the extent of labor misallocation. 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 another type of error, which consists of retaining redundant public sector workers.

Haltiwanger and Singh find that for every dollar spent on severance pay, on average more than two dollars were spent on safety net enhancements. Almost two-thirds of the downsizing operations surveyed included some enhancement of the safety net, such as early retirement programs, counseling and placement services, or wage subsidies. Retraining was a feature in more than half of the operations. Are these programs worth their cost? Probably not, based on previous assessments of the effectiveness of vocational education programs in developing countries (see Middleton, Ziderman, and Van Adams 1993). Usually, the same government agencies that get low grades in the evaluations of vocational education programs end up in charge of the retraining component of downsizing operations. In the context of public sector downsizing, a more relevant assessment is provided by a micro-econometric study of the effects of active labor market programs on employment and earnings in the Czech Republic, Hungary, Poland, and Turkey (Fretwell, Benus, and O'Leary 1998). This study finds that some of the active labor market programs made it more likely for subsets of workers to find jobs after separation. But others did not, and the programs do not appear to have a significant impact on the labor earnings of those who did find jobs.

Two of the studies prepared for the Public Sector Retrenchment project suggest that a considerable amount of resources has been wasted on active labor market programs. An evaluation of the public sector downsizing operation imple-

mented by Spain in the 1980s showed its limited ability to relocate workers to alternative industries, in spite of its extremely large retraining program (Campa 1996). This failure was partly due to retraining being focused on the update of previous skills, rather than on the acquisition of new ones. A case study of downsizing in the Central Bank of Ecuador found that only 12 percent of the displaced workers took the retraining courses that were offered, in spite of these courses being free of charge (Rama and MacIsaac this issue).

## II. ADVERSE SELECTION

Some of the difference in productivity among public sector workers is associated with observable worker characteristics, such as educational attainment or occupation. But part of it is unobservable. Although productivity differences also exist in the private sector, they seem to be exacerbated in the public sector.

Jeon and Laffont (this issue) analyze how policymakers should take into account these unobservable differences when deciding the extent and composition of public sector downsizing. They apply the tools of mechanism design to examine the optimal manner for reducing public sector employment. They show that the optimal composition of the layoffs depends on the nature of the public sector unit and on the prospects workers face after separation. For instance, the public sector unit could produce a socially valuable service, such as basic health or economic management, and the labor market could be tight, so that the prospects for workers with low productivity would be relatively good. In this case, the optimal downsizing policy would be to retain all of the workers with high productivity and to retrench some of those with low productivity. Conversely, the public sector unit could produce a service with little social value, such as steel or direct credit allocation, and the unemployment rate could be high, leaving little hope of finding a job for workers with low productivity. In this case, the optimal downsizing policy would retrench all of the workers with high productivity and retain those with low productivity.

Standard voluntary separation programs usually lead to the departure of the workers with high productivity, because those workers have the best prospects outside the public sector. It follows that standard voluntary separation programs are not appropriate in all circumstances. For instance, these programs would lead to the wrong composition of layoffs when applied to public sector units that produce valuable services and operate in a tight labor market. The fact that these programs were used quite systematically in the past could be one of the reasons why so many separated workers were rehired in the aftermath of downsizing operations.

Before the use of voluntary separation programs became common, governments used other methods to cut expenditures. Several analysts have criticized those efforts, saying that they had an adverse impact on the effectiveness of governments (see Van Ginneken 1991 and Colclough 1997). By compressing

the pay scale, the argument goes, budget cuts encouraged skilled workers to leave, thus jeopardizing the ability of governments to deliver on basic services. There is little doubt that better outcomes could have been achieved by getting rid of genuinely redundant public sector workers and offering better wages and working conditions to the others. However, standard voluntary separation programs can lead to the departure of skilled public sector workers, too, much the same as budget cuts did in the past, and in substantially larger numbers.

Several alternatives have been proposed to standard voluntary separation programs for cases where adverse selection is a serious concern. In a study prepared for the Public Sector Retrenchment project, Levy and McLean (1997) analyze the merits and demerits of some of those alternatives. Randomization is one of them. Each public sector worker would face a probability of losing the job equal to the estimated percentage of redundant workers. This alternative would make the composition of separated workers resemble that of those who remain in the public sector (Diwan 1994). For units producing socially valuable services in a tight labor market, randomization thus represents an unambiguous improvement compared with standard voluntary separation programs. However, Levy and McLean show that closing down those units, or leaving them untouched, could be preferable to a randomized downsizing and that, in general, randomization is not an efficient mechanism for downsizing the public sector.

In the presence of unobservable information, the efficient mechanism for downsizing has to lead the workers to reveal their productivity. Jeon and Laffont show how to implement this mechanism by means of a menu of wage and severance pay pairs. Each pair is associated with a different probability of separation. If the probability of separation is equal to one, the pair can be interpreted as a standard severance pay offer. If it is equal to zero, it can be viewed as a typical, open-ended public sector contract. All of the workers choosing the first pair are retrenched, whereas all those choosing the second one are retained. For pairs in between these two extremes, some of the workers are retrenched whereas others keep their jobs. If the menu is appropriately designed, workers should choose the pairs associated with their socially optimal probability of separation. For instance, if the overstuffed 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 (this issue) find that the targeting of separations significantly reduces the probability of subsequent rehiring. The targeting mechanism can include such simple devices as chasing ghost workers (workers on the payroll, but not working). The experience of the Central Bank of Ecuador, analyzed by Rama and MacIsaac (this issue), is also interesting in this respect. After a first, disastrous attempt to downsize using voluntary separation programs, the Central Bank decided to classify all of its personnel in three cat-

egories: those who were essential for its functioning, those who were clearly redundant, and those for whom it was difficult to tell. The classification was based on the nature of the worker's unit and on the worker's occupation and educational attainment. Essential workers did not have the option to leave, clearly redundant workers did not have the option to stay, and the rest of the workers were proposed a voluntary separation program. In light of the article by Jeon and Laffont, the menu approach has potentially higher payoffs for the third group of workers.

### III. LOSSES FROM SEPARATION

The welfare loss a separated public sector worker experiences can be disaggregated into three components. The first one is the present value of the resulting change in earnings, including bonuses and other cash benefits. Except for highly skilled workers, salaries in the public sector tend to be higher than labor earnings out of it. Moreover, it may take a long time for some of the separated workers to find a new job, and earnings can be close to zero during that period. For simplicity, it is assumed here that displaced workers do not withdraw from the labor force after separation. The logic would be similar in case of withdrawal, except that reservation wages (rather than labor earnings out of the public sector) should be considered when assessing the present value of the earnings loss.

The second component is the present value of the loss in nonwage benefits. Public sector jobs usually provide health coverage and old-age pension, among other benefits. In most developing countries, the jobs available to separated public sector workers do not carry such benefits. The third component is other, more intangible losses from separation. For instance, effort levels tend to be lower in the public sector than out of it, whereas job security is almost invariably higher. The possibility of taking bribes or using government facilities for private purposes also falls into this category.

In preparation for a downsizing operation, policymakers should assess the welfare loss that separated workers might experience. This assessment may help predict the cost of the downsizing operation in terms of severance pay, if workers are fully compensated, or the harshness of their resistance to downsizing, if they are not. The Public Sector Retrenchment project used three empirical strategies to assess the workers' welfare loss and to link it to a variety of observable characteristics of the workers. These characteristics include salary and seniority in the public sector, which are the two variables most commonly used when designing severance pay packages. But they also include gender, age, education level, and province of residence, among others.

The first and more direct strategy is to interview separated workers, and to ask them to evaluate subjectively the change in their well-being. Rama and MacIsaac (this issue) apply this strategy to the study of downsizing in the Central Bank of Ecuador. The subjective evaluation of well-being depends on the

Table 1. Determinants of Losses from Separation

Worker characteristic	Welfare loss				Earnings loss			
	Argentina, white-collar employees	Ecuador, central Bank employees	Egypt, public sector workers	Turkey, cement and oil workers	Ecuador, central Bank employees	Ghana, civil servants	Slovenia, formal labor force	Turkey, cement and oil workers
Public sector wage	+ <sup>a</sup>	0	n.a.	0	0	0	n.a.	+
Seniority in the job	n.a.	+	?	0	+	0	+ <sup>b</sup>	0
Educational level	0	-	+	-	-	0	0	-
Total work experience	?	+	-	+	0	0	+ <sup>b</sup>	-
Female	n.a.	0	+	0	+	+	-	0
Married	-	0	n.a.	0	+	0	n.a.	0
Number of dependents	?	+	n.a.	+	0	0	n.a.	0
Source	Robbins (1996)	Rama and MacIsaac (this issue)	Assaad (this issue)	Tansel (1997)	Rama and MacIsaac (this issue)	Alderman, Canagarajah and Younger (1996)	Orazem, Vodopivec and Wu (1995)	Tansel (1997)

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 was not included in the analysis, n.a. is reported.

a. The coefficient is positive as a result of an implicit restriction imposed by the chosen specification.

b. Almost all work experience was under the self-management system that characterized Yugoslavia until the late 1980s.



amount of compensation received at the time of separation. Rama and MacIsaac use information on the subjective change in well-being and the amount of compensation received to infer the welfare loss from separation.

A second empirical strategy relies on the welfare loss predicted by public sector workers before separation. Robbins (1996) applies this strategy to voluntary separation programs in several banks and government agencies in Argentina. Some of the workers in these banks and agencies accepted the severance pay package they were offered, whereas others rejected it. Robbins uses this information to infer the amount of severance pay that would have made workers with specific individual characteristics indifferent between accepting or rejecting the offer. That amount is an indicator of the welfare loss expected by each worker.

The third empirical strategy assumes that there is a stable relationship between the welfare loss and the earnings loss. Assaad (this issue) applies this strategy to the case of workers in Egyptian public sector enterprises. Using data from a national household survey, Assaad compares the present value of earnings for workers in and out of the public sector. This comparison shows that some public sector workers earn less, over their work life, than similar workers out of the public sector. If these workers do not voluntarily quit, 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 can thus be used to infer the value of nonwage and other intangible benefits from public sector jobs. Assaad assumes that the loss of nonwage and intangible benefits is the same proportion of the salary for other public sector workers.

Under the hypothesis that a stable relationship exists between welfare losses and earnings losses from displacement, studies dealing with the latter can be expected to provide information on the former. Several articles have analyzed the impact of observable characteristics of separated public sector workers on their earnings losses. Some of the studies use data on earnings out of the public sector from surveys of separated workers. For example, Rama and MacIsaac (this issue) refer to Central Bank employees in Ecuador. In another study prepared for the Public Sector Retrenchment project, Tansel (1997) assesses the welfare losses of blue-collar workers in cement and petrochemical factories in Turkey. Alderman, Canagarajah, and Younger (1996) and Younger (1996) look at the case of civil servants in Ghana. Orazem, Vodopivec, and Wu (1995) analyze how earnings changed in Slovenia with the transition to a market economy.<sup>2</sup>

Table 1 summarizes the findings of the available studies on the determinants of welfare and earnings losses from displacement in developing countries and transition economies. The table reports the signs of the impact of workers' characteristics on their welfare and earnings losses.

2. Other empirical studies on public sector downsizing in developing countries, such as the one by Mills and Sahn (1996) for Guinea, or the one by London Economics (1996) for Zambia, do not estimate the impact of individual characteristics on displacement losses. For a comparison with losses from job displacement in industrial countries, see Hamermesh (1989); Topel (1990); Jacobson, LaLonde, and Sullivan (1993); and Fallick (1995).

Several regularities emerge from table 1. 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 the workers are taken into account. Second, with the exception of Egypt, where government hiring and compensation policies strongly distort the payoffs to schooling, the loss from displacement is usually smaller the higher the educational level of the workers. 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 losses from displacement. And fourth, female workers and those with bigger families may be bound to suffer more from displacement.

#### IV. COMPENSATION

The rationale for compensating displaced workers stems from the welfare loss they may experience as a result of separation. However, compensation may contradict the broader objectives of economic policy reform in developing countries and transition economies. Many efforts by multilateral organizations and donor countries focus on reorienting public expenditures toward the most needy. Efforts to tilt the budgetary process in favor of the poor may conflict with the willingness to lend generous amounts of money to finance severance pay packages for workers who are not poor, even after separation (see London Economics 1996). This perspective would justify full compensation only when legal or political constraints make it absolutely necessary. This conclusion may not be valid, however, when public sector workers share a significant portion of their earnings with their extended families, as is the case in some Sub-Saharan African countries. Private transfers imply that for each public sector job suppressed, several households are bound to experience a welfare loss. And some of those households were probably poor even before downsizing. Private transfers also suggest that the displaced public sector workers are likely to share the compensation they receive with their less fortunate relatives. In the extended family setting, compensating the displaced workers may therefore reduce the adverse impact of downsizing on poverty.

While the decision to fully compensate displaced workers should be made on a case-by-case basis, there are clearly no circumstances that would justify over-compensation. This is, however, a bias of downsizing operations based on voluntary separations. Workers who are offered less than full compensation will prefer to stay in the public sector, whereas those who are offered more than full compensation will accept the offer and leave. Therefore mistakes in the direction of excessively low compensation will not reduce severance pay costs, whereas mistakes in the direction of excessively high compensation will materialize. A poor tailoring of compensation packages may exacerbate this second type of mistake.

The Public Sector Retrenchment project leads to a five-step procedure to tailor assistance to the displaced workers when full compensation is needed. This

procedure relies on the third empirical strategy used to estimate losses from displacement because this is the only one that can be applied before any retrenchment has taken place. Fiszbein (1994) used a simpler version of this procedure for Sri Lanka. Assaad (this issue) refined it in his analysis of downsizing in the Egyptian public sector. The five-step proposal in this section also draws from lessons of experience in several countries.

The first step estimates an earnings function for workers who are out of the public sector. The data should come from individual records in labor force or living standards surveys. The right-hand-side variables in the earnings function include individual characteristics that are also observable for workers in the public sector. Ideally, the variables should be exactly the same as those in the records the public sector has about its own employees. The left-hand-side variable measures the labor earnings of all individuals working out of the public sector, including the self-employed and those in the informal sector. More sophisticated analyses of earnings out of the public sector could also try to infer the reservation wage of unemployed or economically inactive individuals. Whatever the sophistication of the analysis, this first step aims to predict the value of earnings for the public sector workers who are bound to be separated.

The second step calculates the present value of the earnings loss that public sector workers experience when they lose their jobs. This calculation compares, for each worker to be separated, his or her public sector salary with the earnings (or reservation wages) estimated in step one. The difference between the two is discounted over the duration of the contract the worker has with the public sector. In most cases this duration is the number of years to retirement.

The third step assesses the loss in benefits. In many developing countries, the most important component of this loss concerns old-age pension. An actuarial calculation of the present value of the forgone old-age benefits can be used to quantify this loss. As a simpler alternative, the calculation could rely on the present value of past contributions to social security, plus accrued interest when applicable. Whatever the chosen approach, previous 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.

The fourth step evaluates workers' loss of other, more intangible benefits. This analysis focuses on groups of public sector workers for whom the sum of the earnings loss estimated in step two and the benefits loss estimated in step three is substantially negative. If these workers stay in the public sector, it is because they derive some other benefits from their jobs. 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 salary can be used to infer the intangible benefits enjoyed by other, less disadvantaged public sector workers.

Finally, the fifth step develops a simple formula to calculate compensation based on a few observable characteristics of public sector workers. Under the

assumption that the losses related to old-age pension are settled separately, the problem is to identify a relatively small set of information that can be used to predict the loss of earnings and intangible benefits in a convenient and noncontroversial way. For instance, making compensation depend on individual characteristics such as gender would not be legally or socially admissible in some countries. Other characteristics, such as marital status or the number of dependents, may be subject to manipulation in countries where common law marriages and extended families are widespread.

The compensation formula developed in step five differs from the typical rules of thumb used to design severance pay packages in two important ways. First, the information set may or may not include salary and seniority in the public sector, depending on how useful these two variables are to predict the loss of earnings and intangible benefits. Second, the coefficients multiplying these two variables, as well as the other variables in the relevant information set, are not arbitrary. They are the coefficients of a regression explaining the predicted loss of earnings and intangible benefits as a function of observable characteristics of public sector workers.

For state-owned enterprises in Egypt, Assaad (this issue) finds that a well-tailored package could reduce the total compensation cost by 31 percent, compared with the best-performing rule of thumb. In the case of the Central Bank of Ecuador, Rama and MacIsaac (this issue) find that well-tailored compensation could have reduced the cost of voluntary separations by 19 percent. Given that the average downsizing operation surveyed by Haltiwanger and Singh (this issue) spent \$87 million in compensation payments, the potential savings from the proposed procedure could be substantial. Moreover, the procedure would be more fair, because it would provide more assistance to those who lose more.

## V. RETURNS TO DOWNSIZING

Downsizing operations involve spending a considerable amount of resources in the short run in order to reap some gain in the longer run. Consequently, the decision to undertake a downsizing operation should consider its payoff, much the same as an investment decision. The most common approach focuses on financial returns, that is, on the impact of downsizing on the budget deficit. This approach can be justified when downsizing is part of a broader adjustment program. However, the decision should also consider the economic returns to downsizing—that is, its impact on aggregate output or welfare.

The first and most obvious financial gain from downsizing results from the cut in the wage bill. In government administration, this cut directly reduces budget expenditures. The budgetary impact may be smaller in state-owned enterprises if their wage bill is only partially subsidized by the budget. A second financial gain results from the reduction in long-term liabilities as separated workers lose all or some of their entitlement to old-age pensions. A third potential gain is

the increase in privatization prices when downsizing is done in preparation for privatization and contributes to its success. The upfront cost is the amount of resources spent in compensation, retraining, and other redeployment programs for separated workers.

An assessment of financial returns should focus on the consolidated budget, not just on the budget of the overstuffed unit. Examples abound where redeployment programs simply shift the fiscal burden to another government body. Consider, for instance, the social services provided by state-owned enterprises in many transition economies. Often taxpayers pay for the cost of these services under the form of explicit or implicit subsidies. When downsizing reduces the number of beneficiaries of these services, it also reduces the burden to taxpayers. However, there is no such reduction if downsizing leads to a mere transfer of these services to central or local governments. Another example is provided by redeployment programs that allow the redundant workers to take another public sector job elsewhere.

This fiscal illusion may be particularly severe when downsizing affects entitlements to old-age pension and other social security benefits. For example, Carneiro and Gill (1997) show that in Brazil the savings from downsizing are substantially smaller for the consolidated government than for the individual states. The pension benefits granted to the displaced workers increase the long-term liabilities of the federal government. As a result of the implicit transfer of obligations, budget savings are 15 to 25 percent lower than it appears at first glance.

Economic returns focus on aggregate output or welfare, rather than on budget revenue and expenditures. Downsizing affects aggregate output or welfare in two different ways: it reduces the equilibrium level of taxes, and it relocates public sector workers to activities where they are supposedly more productive.

The value to society of a lower taxation level should not be confused with the financial returns to downsizing. If transfers were costless, financial returns would be totally irrelevant when assessing economic returns. In practice, however, when the government raises one additional dollar of revenue, there is a net loss to society due to the inefficiencies created by distortionary taxation. This loss, known as the marginal tax burden, can be quite large in developing countries. In India, for example, it was estimated at around 0.8, which means that 80 cents of output are lost per dollar of revenue raised (Ahmad and Stern 1987).

The overall assessment of a downsizing operation depends on whether it uses financial or economic returns. As an example, consider a downsized unit that cannot be privatized and whose wage bill is entirely paid for by the budget. Assume that public sector jobs entail no intangible benefits and that compensation is tailored so as exactly to offset the loss in salaries and benefits that the separated workers are bound to experience. Because the potential earnings of at least some of the separated workers are positive, the government spends less in compensation than it saves in salaries and benefits. Financial returns are thus positive. But this conclusion is not warranted on economic grounds. If many

separated workers end up unemployed, downsizing may reduce aggregate output. More specifically, economic returns to downsizing are more likely to be positive when productivity in the public sector is low, when potential earnings out of it are high, and when the marginal tax burden is large.

Adverse selection can dramatically affect the economic returns to downsizing, without modifying its financial returns much. If the retrenched workers were genuinely redundant, their productivity in the public sector would probably be very low. In the limit, if productivity in the public sector were equal to zero, the economic returns would just be a multiple of the financial returns, so that financial returns and economic returns would be perfectly correlated. However, if the retrenched workers were essential for the operation of a unit producing a socially valuable service, productivity in the public sector could actually be quite large. Good civil servants can contribute to society more than they cost. If they leave, public sector downsizing may have negative economic returns, in spite of positive (and possibly high) financial returns.

There have been several attempts to evaluate the economic returns to public and private sector retrenchment, including those by Jenkins and Montmarquette (1979), Svejnar and Terrell (1991), and Brander and Spencer (1994). Ruppert (this issue) estimates the financial and economic returns to the downsizing of state-owned enterprises in Algeria. She shows that the program is financially sound under a wide range of assumptions; however, its impact on aggregate output depends very much on the efficiency or inefficiency of these state-owned enterprises.

Ruppert considers two extreme cases. In one of them, the public sector productivity of the retrenched workers is equal to zero, and economic returns are high. At the other extreme, state-owned enterprises are on their labor demand curve, so that the marginal productivity of labor is equal to the public sector salary. But the public sector salary is probably much higher than labor earnings in the private sector in Algeria. The unemployment rate there is 28 percent, which suggests that searching for a good job (mainly in the public sector) is much more attractive than taking a bad job (mainly in the informal sector). As a result of this earnings gap, there is a tradeoff between the reduction in distortionary taxation from downsizing and the fall in aggregate output. Ruppert shows that under plausible assumptions, economic returns can be either positive or negative.

The possible discrepancy between financial returns and economic returns illustrates the second-best principle. The initial situation of the public sector unit to be downsized is one where several distortions and imperfections prevail, including overstaffing. Most likely the public sector unit is also characterized by a distorted pay scale, compared with the private sector. And the public sector unit is at least partially financed out of taxes that create distortions and reduce aggregate output. Downsizing operations usually only tackle one of these distortions and imperfections, namely overstaffing. Thus downsizing may not result in improved economic efficiency.

## VI. ONE-COMPANY TOWNS

Public sector downsizing may affect the rest of the economy not only through its fiscal impact, but also through its direct impact on private sector output. The one-company-town setting provides an illustration of this productive externality. The main feature of this setting is the large share of jobs in a particular region (the town, for short) provided by the public sector unit to be downsized (the company). As a result, many of the other jobs in the town also depend on employment and wage levels in the company. For instance, the company's employees are probably the most important customers of the town's private shops. A drastic reduction in employment in the company is therefore likely to depress private sector activity in the town in a very Keynesian way. It follows that the level of earnings and productivity out of the public sector cannot be taken as given.

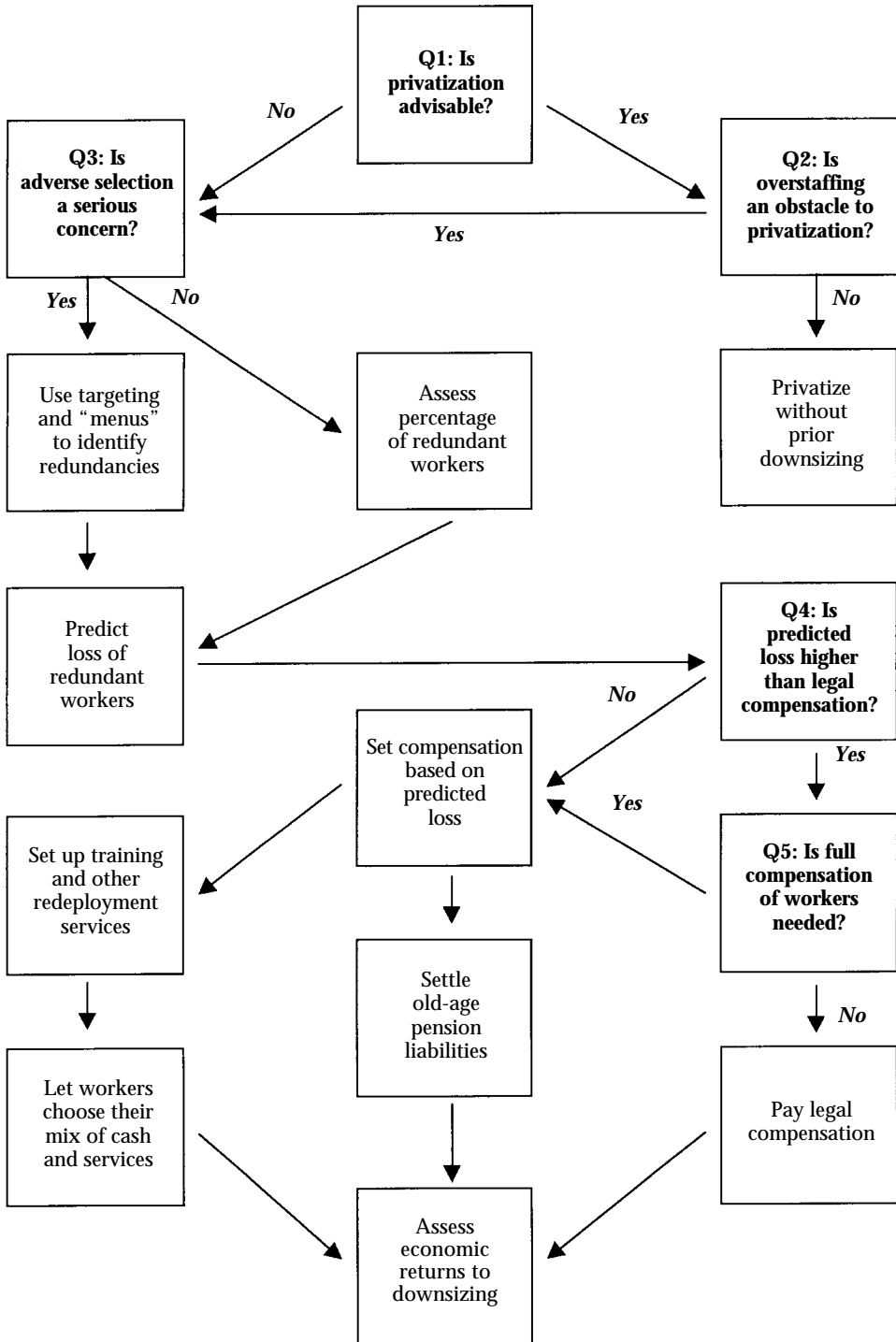
Productive externalities from downsizing may also occur at the national level. Mass retrenchment programs, affecting a substantial fraction of the urban labor force, can increase unemployment rates over long periods of time. For instance, in some Sub-Saharan African countries, where the public sector represents a large share of the modern economy, downsizing may depress economic activity in the short run.

Externalities like those arising in the one-company-town setting provide a justification for retaining some of the redundant workers. Limiting the extent of downsizing certainly entails a cost to the rest of society, which has to pay for these redundancies in the form of higher taxes or lower social expenditures. But retrenching the redundant workers entails a cost to the population that depends on it. The optimal extent of downsizing involves a tradeoff between these two costs.

Rama and Scott (this issue) evaluate the potential externalities from downsizing in the one-company towns of Kazakhstan, a country that has dozens of them. Admittedly, Rama and Scott's estimates represent an upper bound for other countries, where labor mobility between towns is probably higher. The one-company towns of Kazakhstan are quite isolated, both for geographic and for institutional reasons. On the geographic side, Kazakhstan has a relatively small population but is the ninth largest country on earth. On the institutional side, the housing market is poorly developed, and the unemployed need to hold a local passport to draw their benefits. Consequently, the externalities from downsizing could be stronger in Kazakhstan than elsewhere.

Rama and Scott's results suggest that the externality from downsizing can be substantial: retrenching the equivalent of 1 percent of the town's population would reduce the average labor earnings of the town by roughly 1.5 percent. Completely shutting down the average company, in turn, would reduce those earnings by more than 11 percent. These results imply that compensation should not be restricted to the retrenched workers and that transfers of resources to the community as a whole are justified. Whatever the compensation strategy adopted, the calculation of the economic returns to downsizing needs to take this productive externality into account.

Figure 1. A Downsizing Decision Tree





## VII. A PRACTICAL GUIDE TO DOWNSIZING

Many things can go wrong in a downsizing operation, as the discussion in the previous sections shows. But these warnings should not be seen as an encouragement for inaction. One of the studies prepared for the Public Sector Retrenchment project, by Basu, Fields, and Debgupta (1996), deals with the consequences of not addressing the overstaffing problem. In India firms employing more than 100 workers may seek government permission for any retrenchments they wish to make. But these applications seldom succeed, and in the end the firms are often declared sick and are required to continue functioning on the basis of government subsidies. Basu, Fields, and Debgupta show that this seemingly protective legislation not only reduces economic efficiency but also may harm the workers it aims to protect. This is because it reduces labor demand, thus lowering the equilibrium wage level.

This section integrates the main lessons about downsizing into a simple blueprint for action. Figure 1 presents the blueprint in the form of a decision tree, intended to assist policymakers in developing countries and task managers in multilateral organizations and donor countries. For simplicity, figure 1 assumes that there are no productive externalities from downsizing, like those foreseeable in one-company towns.

Question 1 in this decision tree refers to the appropriate private sector counterfactual to public sector downsizing (see Devarajan, Squire, and Suthiwart-Narueput 1995). In some cases, the choice is not whether to downsize, but whether to have the government or the private sector manage the downsizing operation. Discussing whether an agency or enterprise should be privatized (question 1 in figure 1) is clearly beyond the scope of this article. The answer involves efficiency considerations and public interest issues that policymakers need to evaluate carefully in each case. This section addresses whether downsizing should precede privatization when the latter is advisable (see question 2).

If the government does not downsize prior to privatization, the new private owners have to deal with labor redundancies. Because of the ensuing differences in the extent of labor shedding, in the amount of compensation, and in the privatization price of the enterprise, assessing the net gains from downsizing prior to privatization may be difficult. But a net loss is likely.

The total number of displaced workers may be larger when downsizing is managed by the government prior to privatization than when it is left to the new owners. Kikeri (1997) reports examples from various countries where the new owners kept the labor force more or less intact. Based on a more systematic comparison of employment patterns across Polish firms during the transition to a market economy, Frydman and others (1997) show that employment cuts were larger in state-owned enterprises than in otherwise similar privatized firms.

Furthermore, when the government is in charge of downsizing, it may separate the wrong workers from their jobs at an excessively high cost. A wrong composition of the separations is possible because governments usually are not good at managing human resources. If they could make the right decisions regarding whom to retain and whom to lay off and, in addition, if they were able

to deliver on those 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 taxpayer, for instance in the form of early retirement programs, while in principle the new owners cannot. The temptation to resort to golden handshakes should therefore be stronger when downsizing takes place prior to privatization. Case studies suggest that this has happened in practice (see Galal and others 1994).

Unnecessary downsizing costs cannot be recovered through a higher privatization price of the state-owned enterprise. At the theoretical level, 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 that 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. Therefore, the net proceeds from downsizing prior to privatization can be expected to be negative.

At the empirical level, some evidence suggests that the increase in privatization prices resulting from downsizing prior to privatization may not be worth its cost. In a study of the determinants of auction prices for 263 Mexican enterprises privatized between 1983 and 1992, López-de-Silanes (1997) finds that downsizing had a marginal impact on privatization prices. The effect was actually insignificant in one specification and only weakly significant in another. If the significant estimate is taken literally, a 5 percent reduction in employment prior to privatization increases the price of the enterprise by 6 percent. Given the substantial cost of prior restructuring policies, López-de-Silanes draws the key lesson that governments should not do too much: they should simply sell.

Financial returns to downsizing prior to privatization are most likely negative, but what about economic returns? Most likely, aggregate welfare would increase if the new managers of the privatized firms made the downsizing decisions. Discrepancies arise between financial and economic returns because of the presence of several distortions and imperfections, in addition to overstaffing, including distorted pay scales in the public sector and deadweight losses from taxation. The new management has no interest in keeping distorted pay scales, so wages in the privatized enterprise should move closer to the alternative earnings of the workers. And privatization usually eliminates the soft budget constraint, so the fiscal externality disappears, too.

Downsizing may be justified prior to privatization, however, if it enhances the credibility of the reform process (see Vickers and Yarrow 1991 and World Bank 1995). The ability to overcome labor resistance and trim employment could signal the government's commitment to privatization. This signal, in turn, would reduce the uncertainty faced by potential investors, thus making privatization possible. If the government took no action to overcome the opposition of those who stand to lose from privatization, chances are there would be no bids for the enterprise to be privatized.

Question 3 in figure 1 concerns the adverse selection problem. The willingness of multilateral organizations and donor countries to lend substantial amounts of money for severance pay may create a bias in favor of voluntary separation schemes. Moreover, buying out the workers is a simple and convenient way to defuse the opposition to public sector reform. But severance pay creates an incentive for the most productive workers to leave the public sector and for the least productive ones to stay. 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 menu approach to deal with their unobservable differences.

Questions 4 and 5 in figure 1 concern assistance for separated workers. Whatever the combination of cash, retraining, and redeployment services, the government should not spend more than the amount needed to buy out the redundant workers. The expected losses from separation thus provide a benchmark against which to judge both the existing laws on compensation and the ad hoc packages proposed in the context of downsizing. Analysts can use labor market data to predict the expected losses based on observable characteristics of the workers, such as education, seniority, and gender.

Workers' predicted losses may be higher than their legal compensation. In this case, given that public sector workers are rarely poor, even after separation, it is preferable to apply the law. Alternatively, the predicted losses may be lower than legal compensation. In Guinea-Bissau, for instance, severance pay for civil servants is set at 10 months of salary per year of service. The average compensation package thus amounts to 9.6 years of salary. Using the procedure proposed in section IV, the average loss from separation would be 4.2 years of salary (Chong and Rama 1998). In a case like this, it is advisable to try to modify the laws governing severance pay.

Retraining and other redeployment programs deserve special attention when 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 to minimize the potential waste of resources. Basically, separated workers should be allowed to choose between enrolling in any of the programs offered and cashing in the equivalent of their marginal cost. This demand-driven approach would make it more difficult for vocational training programs and other (often ailing) government agencies to divert resources from the downsizing operation.

## VIII. CONCLUDING REMARKS

Public sector downsizing may become a major reform endeavor in developing countries in the coming years, much the same as trade liberalization and financial liberalization were in the past two decades. These reform efforts can sub-

stantially improve economic efficiency. But the risks are considerable, too. The comparison between the successful experience with trade liberalization and the more mixed record with financial liberalization shows the importance of a well-designed reform protocol.

This article and, more generally, the Public Sector Retrenchment project represent an attempt to sketch a protocol for public sector downsizing. This attempt should be interpreted with great caution. Some of the findings and policy recommendations may need to be adjusted, and some are possibly wrong. More research and experimentation are certainly needed to move in the direction of a more comprehensive and reliable protocol. Forthcoming downsizing operations provide an ideal opportunity to test and evaluate some of the hypotheses and recommendations. A strong interaction of policy and research in the immediate future could contribute to the success of public sector downsizing endeavors over the longer run.

But even a carefully designed protocol could prove ineffective if the mechanisms that led to overstaffing in the first place remain unchallenged. The equilibrium level of public sector employment is probably determined by political forces operating in the context of a particular institutional setting. Temporary incentives to downsize, such as financing for severance pay packages, will probably fail to modify that equilibrium. The institutional setting itself would need to evolve in the direction of increased professionalism and efficiency. Downsizing operations should therefore be part of a broader effort to reform and modernize the public sector, not just isolated endeavors.

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