

Prospects for Social Security Reform

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Pension Research Council
The Wharton School of the University of Pennsylvania

PENN

University of Pennsylvania Press
Philadelphia

Pension Research Council Publications

A complete list of books in the series appears at the back of this volume.

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Printed in the United States of America on acid-free paper

10 9 8 7 6 5 4 3 2 1

Published by

University of Pennsylvania Press

Philadelphia, Pennsylvania 19104-4011

Library of Congress Cataloging-in-Publication Data

Prospects for social security reform / edited by Olivia S. Mitchell,
Robert J. Myers, and Howard Young.

p. cm.

"Pension Research Council Publications."

Includes bibliographical references.

ISBN 0-8122-3479-0 (alk. paper)

I. Social security—United States. I. Mitchell, Olivia S.

II. Myers, Robert J. (Robert Julius), 1912— . III. Young,
Howard, 1932— . IV. Wharton School. Pension Research Council.

HD7125.P733 1998

368.4'3'00973—dc21

98-41908

CIP

Frontispiece: Special Treasury securities, stored in a federal government filing cabinet in West Virginia, represent \$700 billion in Social Security Trust Fund assets. Photo: Jeff Baughan.

III

Political and Practical Considerations Regarding Social Security Reform

Chapter 12

Compliance in Social Security Systems Around the World

Joyce Manchester

How can social security programs best be structured to encourage participation while at the same time promoting the goals of old-age insurance within an efficient and equitable system? If workers do not perceive the need to pay into the government-sponsored pension system to provide financial stability in old age, and if the tax authority cannot persuade them of the desirability of doing so, evasion can result. Tax collection agencies will then collect less revenue than they should, tax rates must be higher with corresponding labor market effects, and some people will not have adequate resources in old age. In addition, the economy may suffer efficiency losses because people adjust their behavior to escape paying the tax. National saving may be depressed and development of financial markets may lag, with deleterious effects on growth.

This chapter examines the problem of noncompliance in social security systems from the perspective of the economy, the individual, and the tax administrator. We then present evidence on the extent of noncompliance in the United States, Germany, and a range of developing countries. Several lessons emerge that could inform the policy debate in the United States. We conclude with suggestions for social security reform targeted to the problem of evasion, some of which are pertinent to the proposals offered by the recent Advisory Council on Social Security.

Evasion in Social Security Programs

The term “tax evasion” can be broadly defined to include tax avoidance as well as flagrant refusal to abide within the law. In the context of social security programs, examples of evasion include sheltering part, but not all, of income from payroll tax, avoiding the tax by not working or by working in the informal sector, or retiring early so as not to pay the tax. In each case,

workers or their employers change behavior in response to the social security program. Such behavioral changes instigated by the tax system result in some loss for the economy. Economists refer to such a loss as an "efficiency loss," since resources are no longer put to their best use. Hence tax avoidance as well as tax evasion imply that the economy does not produce as much as it could otherwise.

In general, tax evaders face some risk of being identified and fined, and the economy also suffers from the revenue loss. In some cases, evaders may still benefit from public services provided by the government, such as national defense, highways, and education. In the case of social security, however, evaders may be shut out from the system, or may only receive partial social benefits in their old age. Though such treatment may be deserved, a young working person may not look far enough ahead to realize the consequences of not participating in the system today. In other words, evasion within social security systems can have more serious consequences for individuals than evasion within the general tax system.

The structure of social security systems sometimes invites evasion, though not always intentionally. Social security programs usually levy payroll taxes on earnings at a constant rate, up to a maximum level of earnings and with no exemptions. Generally, social security taxes are not levied on non-wage compensation (e.g., health insurance, provision of a car, subsidized cafeteria lunches) or capital income, and most countries allow the self-employed either to decide the amount of their contribution or to contribute on a voluntary basis. On the expenditure side, social security old-age benefits generally take the form of a flat amount plus an amount proportional to past earnings. Conventional defined-benefit formulas typically provide benefits based on the number of years of contribution and the average wage over the last few years before retirement. When the last few years of work matter for the benefit received, or when a spouse's employment history has little bearing on eventual benefits, people may change their behavior to avoid the payment of contributions.

Why Be Concerned About Evasion?

Evasion is a problem for the economy at large, for the individual, and for a nation's tax administration system. Eliminating evasion completely might not be desirable even if it were possible, but many countries would enjoy greater production, faster growth, and better protection for their elderly populations if they increased compliance in their social security systems.

The Economy-Wide Perspective

Noncompliance or evasion leads to three negative effects for the economy at large. First, evasion results in lost revenues and larger distortions in labor

markets, because higher tax rates are needed to get the same revenue. The economy produces less than its potential because people work less, apply for disability pensions more readily, and retire early. These problems are currently serious for many Central and Eastern European countries. Second, when the informal sector is less productive than the formal sector, aggregate output is reduced as well. Evidence from several Latin American countries supports this view. And third, national saving may be lower than under full compliance because most workers who evade probably cannot or will not save on their own. More discussion on each point follows.

Labor market distortions and efficiency losses. Analysts identify two components of the loss in well-being, or "deadweight loss," associated with distortions in labor markets due to payroll taxes. First, a distortion arises when individuals do not understand the link between social security contributions and benefits (Auerbach and Kotlikoff 1987). For example, complex benefit rules and differences among individuals in the implicit rate of return on contributions may lead workers to disregard the link between their contributions and anticipated benefits. At the extreme, people may treat the payroll tax as a pure tax for which nothing is received in return. In this case, a shift to "notional accounts" that are individual accounts but still under the pay-as-you-go framework could eliminate the deadweight loss. Under a tax system that combines lump-sum taxes and notional accounts, individuals would perceive no net tax at the margin, though the rate of return could be very low.

The second component of deadweight loss concerns the loss in well-being that occurs when contributions to the social security system earn the rate of growth of the economy in a pay-as-you-go system, rather than the higher market return on capital in a privatized system. Feldstein and Samwick (1996) argue that current benefits in the U.S. social security system could be paid for with a contribution rate of only 1.96 percent of payroll, rather than the current 12.4 percent, if contributions were invested at the private market rate of return rather than in the pay-as-you-go system. Hence the deadweight loss from social security arises from the extra 10.44 percentage points of the payroll tax. Feldstein and Samwick estimate this deadweight loss to be equivalent to 2.5 percent of earnings, or about 1 percent of GDP. After accounting for the transition costs involved in pre-funding a new privatized system, the deadweight loss of social security is calculated to be worth 1.57 percent of taxable payroll, or about 0.6 percent of GDP.

This sort of calculation would not necessarily apply to regions of the world in which large informal labor markets operate. Here, high payroll taxes induce informal-sector work where social security taxes are not collected. In such cases, spendable income and future retirement benefits obtained from working in the formal sector must be compared with spendable income (including possible penalties if detected) and lack of retirement benefits obtained from working in the informal sector. Both of these must be com-

pared with the rewards to leisure. Hence the economic problem becomes much more complicated and depends, for example, on how people respond to the risk of being fined if caught evading the tax (Cowell 1985; Slemrod 1996).

Output losses. Evasion can result in output losses for the economy directly if the informal sector is less productive than the formal sector, due to a lower capital/labor ratio in the former. Evidence from developing countries suggests that formal sector production is, in fact, more capital-intensive than production in the informal sector (Corsetti 1994; Schmidt-Hebbel 1996). The distribution of firms according to factor intensities ranges from large and highly capital-intensive formal-sector enterprises in manufacturing, mining, and utilities, to the urban street vendors and the rural small landholders who work with little or no capital and often represent the core of the informal economy. For example, an average formal-sector worker in Peru works with US\$30,000 of capital, but informal sector workers have capital worth only \$1,000 (Castiglia, Martinez, and Mezzer, cited in Schmidt-Hebbel 1996).

Markedly different capital-labor ratios by sector imply that factor reallocation from the labor-intensive informal sector to the capital-intensive formal sector in response to reducing the tax wedge of social security taxes would reduce wages and increase interest rates in the economy at large. Lower wages and higher interest rates would benefit retired cohorts and hurt future generations. However, such an effect seems to be offset empirically by future efficiency gains arising from shifting resources toward the formal sector, augmented by possible efficiency gains in capital markets and pension system management. Evidence suggests that the efficiency gain accruing to all generations may be very large because managerial and technical skills seem to be disproportionately concentrated in formal production sectors of developing economies. Significant further efficiency gains due to pension reform could be reaped from capital-market deepening and adopting a pension system with tax-benefit linkage managed by the private sector, as argued by the recent literature on pension reforms (World Bank 1994; Corsetti 1994; Holzmann 1997).

Saving effects. If social security contributions represent forced saving (i.e., individuals would not save the mandated proportion of earnings unless compelled to do so), then aggregate saving falls occurs when individuals evade the social security tax. This saving effect is easy to see when the social security system is funded. In a defined contribution pension scheme in which individuals are required to save 10 percent of their earnings in an individual account, for example, aggregate saving is less when workers evade the contributions unless they save at least as much on their own. But low-income workers in the informal sector would likely not save as much independently. Hence aggregate saving falls and future growth of the economy may be depressed as a result of evasion.

One exception to the negative relationship between evasion and aggregate saving might occur in a purely pay-as-you-go system, in which participants save less for retirement because they expect social security to provide benefits. The pay-as-you-go nature implies that no accumulation of funds takes place within the social security system, because current contributions are spent on current benefits. Those who do not participate would likely save more for retirement on their own, so aggregate saving could be greater when evasion occurs. Partial offset would occur, however, because participants would have to pay a higher contribution rate to make up for the reduction of revenue from the evaders, and some of that higher contribution would have gone to increased private saving if payroll taxes had been lower.

Even in a pay-as-you-go system, however, noncompliance may reduce aggregate saving if the incentives of the program induce strategic behavior. For instance, some social security programs require beneficiaries to contribute for a minimum number of years to qualify for a pension. Workers who participate in the formal sector for the minimum number of years, and then evade payroll taxes for the remainder of their working lives, may receive the same level of benefits as those who remain in the formal sector. Those minimum benefits are financed out of higher payroll taxes on participants, again reducing national saving. In a second example of strategic behavior, a second earner in a married couple may not need to contribute to social security at all to qualify for benefits. In the United States, for example, the second earner receives 50 percent of the first earner's benefit without contributing. Evasion by these second earners, who may choose to work in the informal sector or to conceal their earnings from the tax authority, again requires higher payroll taxes on participants to provide benefits for all eligible individuals.

Solvency effects. Evasion can also have consequences for the long-term viability of a social security system. In a pay-as-you-go system, evasion leads to higher contribution rates for those who do contribute. Consequent increased distortions in labor markets lead to even more evasion. Eventually, such a system could collapse. In a defined contribution system with individual accounts, however, retirees receive only the value of their contributions (plus earnings) over their working years. Those who do not contribute cannot later claim benefits, thereby lessening the financial strain on the system.

The Participant's Perspective

From the participant's perspective, the question is whether the promise of old-age benefits from the social security system warrants making contributions when young (Bailey and Turner 1997). Those who have a high discount rate, meaning that they value a dollar of consumption today more highly than a dollar of consumption in the future, and those who are myopic and simply do not concern themselves with the future, may choose not to

contribute to the social security program. Those with little or no confidence in the tax administrator or the government may choose not to participate as well. Those who do not perceive a link between contributions today and benefits tomorrow or who see better rates of return elsewhere may find preferred uses for their dollars. High inflation may erode promised benefits, reducing credibility in the system. And an individual with a low life expectancy may conclude that the annuity provided by social security is not a good deal. As a result, some of these individuals will be vulnerable in old age due to lack of full participation at younger ages. High penalties if caught or strong aversion to breaking the law may deter some from evading the system.

The problem of noncompliance is not limited to developing countries. In the United States, 42 percent of all returns had some understatement of taxable income in 1979 (Slemrod and Bakija 1996). When asked about their past tax compliance behavior, about one-quarter of taxpayers responded that they failed to comply at some point within the past five years. Because of tax evasion, some people pay less tax than they should, and everyone else pays more.

Of course, what matters for labor supply and the decision to stay in the formal labor market is the marginal tax rate on total compensation, not just the marginal tax rate arising from the payroll tax on wages received. Total compensation includes employee benefits such as health insurance and pension benefits as well as payroll taxes paid by the employer. Since such benefits are excluded from tax in many countries, the "effective" marginal tax on total compensation is often much less than the statutory tax rate on wages. For example, in Albania the statutory payroll tax rate in 1979 was 31.7 percent, while the effective payroll tax rate was just 19.5 percent; in Croatia, the tax rate was 22 percent, but the effective rate was just 12.4 percent (Andrews and Rashid 1996).

Moreover, the payroll tax is only one component of the total marginal tax on earnings. The overall tax wedge includes employees' and employers' social security contributions as well as personal income taxes and consumption taxes. Calculating social security contributions and income taxes by applying tax rules to the level of earnings of an average production worker, the average overall tax wedge for European OECD countries was 63.1 percent, while the average for Australia, Canada, Japan, the United Kingdom, and the United States was 39.8 percent (OECD 1993).

The Tax Administrator's Perspective

Tax administration plays a crucial role in influencing attitudes toward tax evasion and enforcing the rules. An agency's ability to collect taxes depends on organization, institutional infrastructure, and operations, including access to sufficient financing. But it also depends on cultural factors, economic

conditions, and legal mandates (Vazques-Caro and Reid 1992). When the employer withholds payroll taxes directly, managing those transactions becomes important and depends heavily on record-keeping by employers.

Countries have adopted different strategies to facilitate and monitor taxpayer compliance and to collect the information required by a social security system. In Argentina, for example, the banking sector acts as the tax collector and reports to the government tax administrator. In Germany, by contrast, social security taxes are collected by the public health system and transferred to the public pension insurance institutions. Then the public pension institutions conduct on-site supervision of both the health system and employers to determine whether contributions were collected correctly. In Lithuania, the revenue and data collection systems for social insurance taxes and income taxes are separate. In the United Kingdom and Ireland, revenue collection occurs in one agency, while separate agencies have responsibility for inspection and enforcement. In the United States, the Social Security Administration is charged with identifying those who are delinquent in paying contributions. But the Internal Revenue Service has responsibility for collecting taxes, auditing taxpayers, and enforcing payment.

Insight from the theoretical literature. Economic studies of tax compliance use principal-agent models to model the interaction between the taxpayer and the tax collector (Reinganum and Wilde 1985). In this framework, a tax collector (the principal) is allowed to act strategically, basing its audit rules on the information it receives from taxpayers (the agents). At the same time, audit policies of the tax agency affect taxpayer reporting decisions, with higher audit probabilities generally leading to less evasion. Groups that are audited most heavily may nevertheless show the highest rates of evasion, despite the deterrent effect of audits, because the tax collector has information identifying those groups as likely evaders.

Other studies focus on the fact that not all evasion is detected, and that not all taxpayers respond to incentives to evade (Feinstein 1991). Auditors differ in their ability or willingness to determine the size of the "true" tax base, and taxpayers may be differentially able to disguise their "true" tax liability. Federal income tax evasion in the United States was estimated to be almost 2 percent of GDP in 1991 (Alm 1996), but econometric analysis suggests that only about one-half of tax evasion is detected (Feinstein 1991).

Beyond the financial incentives influencing taxpayer reporting decisions emphasized in the economics literature, other factors play an important role and have been studied in the sociology, psychology, and legal literatures on tax compliance (Cowell 1990). Improving a tax agency's public image and its treatment of taxpayers may go a long way toward increasing compliance. Hence explaining different behavior across countries may not be possible by looking at financial incentives of the social security system alone.

Often evasion is intertwined with the problem of bureaucratic corruption

in tax administration (Schleifer and Vishny 1993). One analysis finds that a rise in the tax rate produces lower net revenue, when some proportion of the auditors are corrupt and enforcement costs are nonzero. In this case, it may actually be more cost effective for the government to lower audit probabilities and allow some cheating (Gang, Goswami, and Sanyal 1996). If corruption is low enough, however, revenues garnered from capturing people cheating may exceed those from choosing an audit structure in which everyone declares their true income.

How Bad Is the Problem of Tax Evasion?

Evidence from a few developed and developing countries highlights specific tax evasion problems under existing social security programs.

Developed Countries

On the whole, evasion is not believed to be a major concern in the United States, although the growing presence of self-employed individuals may alter that perception in the future. In 1987, the tax gap for social security and Medicare taxes, meaning the amount that was not paid, was estimated at \$34 billion in 1997 dollars, or 0.5 percent of GDP (see Table 1). Unpaid taxes among the self-employed accounted for 65 percent of the total. The overall noncompliance rate for U.S. social security and Medicare taxes, defined as the aggregate amount of the tax liability not paid voluntarily as a percentage of the "true" tax liability, was 11.0 percent in 1987. The noncompliance rate was just 4.5 percent for social security and Medicare taxes paid through employers (FICA taxes). In 1997, the employment tax gap was estimated at \$50 billion (Internal Revenue Service 1993).

Among the 10 percent of workers who are self-employed, however, the noncompliance rate is much higher, at about 55 percent in 1987. Such a high noncompliance rate among the self-employed suggests that evasion is an issue for social security even in the United States, and the IRS admits that the estimates may be underestimates of the "true" tax gap. One reason the estimates may be too low is that there is an unknown number of nonfilers of all types of employment tax returns. Another reason is that people may underpay the self-employed social security tax.

Available evidence indicates that U.S. noncompliance may be concentrated among women workers. The proportion of working women reporting self-employment earnings rose from 3 percent to 7 percent between 1975 and 1992, and now represents more than 4 million women (Social Security Administration 1995). The proportion of working women who reported being self-employed on the job held longest during the calendar year grew from 4.1 percent to 6.7 percent between 1975 and 1990 (Devine 1994). Self-employed women tend to be middle-aged, with about two-thirds of them

TABLE 1. Estimates of the Social Security and Medicare Tax Gaps and Noncompliance Rate, 1987 and 1997

	1987	1997
<i>Gross tax gap (billions of 1997 \$)</i>	34.1	49.7
FICA	12.0	18.1
Reporting gap	4.1	7.6
Remittance gap	7.7	10.5
SECA		
Reporting gap	22.1	31.6
<i>Noncompliance rate (percent)</i>	11.1	10.3
FICA	4.5	4.2
SECA	55.7	58.7
<i>Net tax gap (billions of 1997 \$)</i>	28.8	42.5
FICA	6.8	11.1
SECA	22.1	31.4

Source: Internal Revenue Service (1993). These are Alternative I estimates, based on the "recommendations" of IRS examiners. Alternative II estimates, based on amounts eventually assessed, are slightly smaller. The gross tax gap is the aggregate amount of that year's tax liability that is not paid voluntarily and timely. The noncompliance rate is the gross tax gap as a percentage of "true" tax liability. The net tax gap is the amount of the gross tax gap remaining after IRS enforcement activities. FICA refers to the Federal Insurance Contributions Act mandating social security and Medicare taxes for employees who work for employers. SECA refers to the Self-Employment Contributions Act, mandating social security and Medicare taxes for self-employed workers.

between the ages of 30 and 54 in 1992, compared with 55 percent of all working women in this age group. One in 10 employed women over the age of 35 was self-employed in her main job in 1990. Moreover, self-employed women tend to be clustered around the low end of the income distribution. More than three-quarters of those women reported earnings of less than \$18,000 in 1992, and more than half reported earnings of less than \$8,400. Fully 75 percent of women who were self-employed in their main job were married with a spouse present, meaning that if they paid the full 12.4 percent self-employment tax for social security, but planned on collecting benefits through a spouse, their full contribution was likely to be viewed as a pure tax (Feldstein and Samwick 1996).

By contrast, evasion does not appear to be an important problem in the German pension system. This is the result of a tight network and cross-check system connecting the databases of the Tax Authorities, the Labor Office, and the health, unemployment, and pension insurance system (Queisser 1996). Even minor employment contracts not subject to social insurance contributions are registered to verify total earnings per person and insurance exemption. Social insurance coverage is also seen to be in the in-

terest of employees, particularly because family members are covered by government-provided health insurance at no extra charge. Since social insurance coverage is comprehensive, workers are automatically enrolled in pension and unemployment insurance as well. Contributions are collected by approximately 1,200 statutory sickness funds and then transferred to the respective pension insurance institutions. The sickness funds are reimbursed by the pension system for collection costs. Public pension institutions conduct on-site supervision of both sickness funds and employers to determine whether contributions are collected correctly. About one-fifth of all German employers were audited in 1994, and only 5 percent of employers were found to have contributed less than the mandated contributions.

Germany does face a serious financing problem in its social security program because so many people retire early or qualify for disability benefits at an early age. Hence a large discrepancy exists between the system dependency ratio and the population dependency ratio. While these early retirees and disabled persons are generally not labeled evaders, because they are acting within the law, the conditions for qualifying for early benefits may have to be changed to preserve the long-run viability of the system.

Developing Countries

In many developing countries, the ratio of pension system contributors to the size of the total labor force is 40 percent or less (see Table 2). Informal labor markets play a prominent role in these economies, and the structure of labor markets often leads to frequent unemployment or underemployment. Low compliance rates in the face of aging populations imply high contribution rates for those who remain in the system, and may portend shrinking benefits for those who expect to receive old-age support.

Measuring social security evasion in developing countries, however, is tricky business. Some analysts point to the ratio of the number of people who currently contribute to the pension system relative to the number of people who participate in the pension system, meaning that they have contributed at one time. However, many countries do not require the self-employed, those temporarily unemployed, or students to contribute to the system. For example, the ratio of active pension contributors to system participants is only around 50 percent in Chile, suggesting that many people are avoiding contributions by working in the informal system (Campbell 1994). But Chile does not require the self-employed, military personnel, and several other categories of working-age individuals to contribute. A careful study of evasion in Chile found that over 95 percent of those required to contribute to the Chilean pension scheme do so (Chamorro 1992). Such high compliance may in part result from a careful system of cross-checks that includes car dealers and other retailers. Nevertheless, it remains true that people may join the informal labor market to avoid paying

TABLE 2. Ratio of Public Pension Scheme Contributors to the Labor Force in Major World Regions, Late 1980s to Early 1990s

	<i>Percent</i>
OECD countries	93.9
Latin America and Caribbean	38.3
Middle East and North Africa	41.3
Asia	23.5
Sub-Saharan Africa	6.4

Source: World Bank (1994), Table A.4. Note: Unweighted averages.

TABLE 3. System Dependency Ratios and Demographic Old Age Dependency Ratios, 1992

	<i>System Dependency Ratio</i>	<i>Demographic Old Age</i>
Czech Republic	49	32
Hungary	59	36
Poland	49	28
Russia	46	31
USA	31	30
Switzerland	43	34

Source: Vittas and Michelitsch (1995). Note: The system dependency ratio is the number of pensioners, including widows, orphans and disability pensioners, divided by the number of contributors. The demographic old age dependency ratio is the number of people 60 years and over divided by the number ages 20 through 59.

the contribution to the pension system. The share of the informal sector in Chile is estimated to be about 18 percent of gross domestic product (GDP) and has grown to more than half of GDP in some Latin American countries (Loayza 1994).

Countries with only small percentages of working age people contributing to the social security system face increased revenue pressures both now and in the future. For example, in Romania, half of the working age population contributes to the social security system, while 75 percent of the working age population is employed (Andrews and Rashid 1996). As a result, the revenues flowing into the social security system are not as high as they might be. And as these non-participants age, some of them will require public assistance. The magnitude of the problem is suggested by the divergence between the system dependency ratio and the demographic old age dependency ratio (see Table 3). In Hungary, for example, the ratio of pensioners to contributors is 59 percent, although the ratio of people age 60 and over to the working age population is just 36 percent.

Two diverse ways of dealing with this problem are illustrated by Chile and Argentina. In Chile, all elderly people are eligible to receive a minimum

level of social assistance that is means tested, whether they have contributed to the pension scheme or not. Those who have contributed to the pension system for at least 20 years are guaranteed a more generous minimum pension, since the government will “top off” the individual’s pension account. Both the social assistance and the minimum pension are financed out of general revenues, where the tax base is more broadly based than the payroll tax. In Argentina, by contrast, the elderly receive a flat benefit only if they have contributed to the pension system for a minimum of 30 years. Those who have contributed less than 30 years get social assistance only. Flat benefits are financed out of the payroll tax, implying that the tax burden falls disproportionately on groups with lower earnings.

Brazil illustrates the important role that policy reform and central record-keeping can play in reducing evasion. In the early 1990’s, Brazil’s pay-as-you-go scheme offered rather generous benefits for both pensioners (after just 6 years of affiliation, increasing to 15 years in 2012) and disabled persons (after only one year of affiliation), replacing between 75 and 100 percent of the individual’s average salary (World Bank 1995). Contribution rates to support the social insurance system in 1992 were as high as 45 percent. On top of the payroll tax, the tax rate on corporate profits was about 50 percent, of which 10 percent went to the social security system. In part as a response to these conditions, half the labor force worked in the informal sector, but over half of the labor force qualified for pensions. In some parts of Brazil, applicants for benefits need only supply self-maintained evidence of annual contributions to the social security system, leaving open the real possibility of counterfeit credentials. It is therefore hardly surprising to see a large discrepancy between the social insurance dependency rate (40 percent) and the population dependency rate (15 percent). Moreover, a recent crackdown on fraudulent receipt of benefits in the state of Rio found that 10 percent of benefits were paid to dead beneficiaries. Central record-keeping would enhance participation in the system and rein in undeserved benefit payouts. In addition, moving to a system in which contributions over a longer working period are more closely linked to benefits would encourage participation in the system.

Recent experience in the Ukraine demonstrates how structural change in the economy can sometimes wreak havoc with a national pension system. Following the fall of the Soviet empire, GDP in the Ukraine fell 45 percent and real wages fell to about 37 percent of their 1990 levels. Prior to 1990, evasion in the government-sponsored pension system did not exist, since the state-owned enterprises paid the 32.5 percent contribution to the state and workers complied with their one percent contribution. As real wages dropped and firms began to focus on maximizing profits, however, the old-age pension system came under great strains. Pension fund revenues declined sharply, while the number of beneficiaries rose. According to a 1995 household survey, more than one-third of Ukrainian respondents allocate

time to occupations best seen as informal, including working on land plots (Fallon, Hoopengardner, and Libanova 1996; Riboud and Chu 1996).

The prevalence of informal sector activity together with retirement at early ages imply that the pension system in its current form is not sustainable in the Ukraine. Men can receive a full pension at age 60 if they have worked 25 years in covered employment, and women can receive a full pension at age 55 if they have worked 20 years in covered employment. Those without the requisite number of years in covered employment but older than the normal retirement age can receive a social pension, equal to 18 percent of the average wage. But these promises probably cannot be kept: the system dependency ratio (the ratio of pensioners to contributors) is now about 120 percent, while the population dependency ratio (those age 60+ divided by those age 20–59) is just 49 percent. In addition, the share of employment in the formal sector (now 60 percent) may continue to decline for three reasons. First, as financing shortages have hit the system, pension benefits have been so compressed that the link between contributions and benefits is now extremely weak. Second, high payroll taxes encourage employers and employees to evade tax payments. Third, expansion of self-employment and the private sector as state-owned enterprises shrink will probably increase the size of the informal sector. Simulations suggest that the current pension system would be sustainable only if the share of the formal sector were to remain constant (Riboud and Chu 1996), but this is unlikely, so major changes will be needed in the structure of the Ukrainian pension system.

Concern about working women who are self-employed is not unique to highly industrialized countries, as illustrated by Turkey. In that country, women comprise 12.5 percent of self-employed workers, whereas they represent just 10.2 percent of workers employed by others, not including civil servants (Bag-Kur Statistical Yearbook 1994). Large percentages of self-employed women outside the social security system may mean less saving for the economy today, and more dependence on social assistance for these women in retirement.

Will Changing Incentives Cause People to Change Their Behavior?

A key question that must be answered when seeking to reduce pension system evasion is whether people would move out of the informal sector and start paying contributions if the pension scheme were to be reformed. Little direct evidence to answer this question is available, though related information appears promising. Research in Brazil recently found that, regardless of gender or age, an increase in payroll taxes reduced the probability of contributing to the social insurance system (World Bank 1994). If these elasticities also work in the other direction, then reducing payroll tax rates should increase contributions to social security. For workers age 30 to 39,

the responsiveness was substantial (elasticities of one for both men and women).

Other experience also suggests ways to reduce tax evasion. For example, India undertook an extensive overhaul of its income tax system in 1985–86. Prior to the reform, taxes on individuals were based on a schedule with eight tax brackets and a maximum marginal tax rate over 61 percent. After the reform, the number of tax brackets was reduced to four and the maximum marginal tax rate was reduced to 50 percent. At the same time, the tax base was broadened by limiting tax concessions in the areas of individual saving, business investment, and depreciation provisions. Following the reform, revenue gains were attributed to the induced decrease in tax evasion (Das-Gupta and Gang 1996). But tax evasion declined as a response to both rate reduction and more assiduous income-tax enforcement. Conversely, tax evasion appeared to be relatively insensitive to reform efforts. This implies that base-broadening efforts should be complemented by reforms designed to strengthen tax administration and raise enforcement capacity. Reforms of the tax base had less effect on the tax base of upper income groups compared with lower income groups, due to the increased propensity of upper income groups to use tax shelters.

Recent experience on tax reform efforts in Argentina is less promising. Contribution rates for social security were cut 16 percent at the end of 1995, but no change in evasion was observed in the year immediately following the change; in fact, revenues fell by approximately 16 percent. Some observers explain this behavior by noting that many workers may have seen the lowered contribution rate as temporary, because the pension system is running such large deficits. Whether the decline in contribution rates will have a noticeable impact on evasion after several years remains to be seen.

Options for Curbing Evasion in Social Security Programs

Reducing evasion in social security programs around the world has been discussed in several recent contexts (World Bank 1994; Mitchell and Fields 1995; James 1997). One proposal is to make the pension system itself more efficient, equitable, and better administered. A mandatory pension program for all workers would avoid the problems of adverse selection inherent in a voluntary system, and would take advantage of the benefits of forced saving for individuals as well as the economy. Overly generous benefit levels risk imposing unreasonable contribution rates on workers. Recognizing that the link between benefits and contributions must be clear to all workers, defined contribution plans are more transparent than defined benefit plans, but notional accounts or other accounting devices could have similar incentive effects. Pension benefits paid only to those who have paid into the system for a given number of years and only after a certain age encourage participation. Both the number of contributing years and the age limit

should be chosen with care to fit the structure of labor markets and the demographic characteristics of the country. The laws regarding disability benefits must be designed carefully to avoid easy access to disability benefits in lieu of qualifying for pension benefits. To protect those who do not qualify for the pension plan, a single anti-poverty program should apply to all individuals.

In addition, it must be recognized that some developing or transition countries may choose to exempt large segments of the working population from the mandatory scheme for social security, perhaps because enforcing compliance among the informal sector is too difficult. Nevertheless, in this event, both the economy and the exempted individuals will miss out on some important benefits. The economy will not reap the rewards of a higher saving rate that leads to more investment and greater output. Individuals outside the system will be at the mercy of politicians to provide a minimum level of social assistance in their old age, with benefits derived from general tax revenues or debt finance. This too imposes an extra burden on the next generation of workers.

Along with social security policy reforms must come better tax administration and enforcement to encourage confidence in the system, transparency in its operations, functional independence, and financial accountability (Reid and Mitchell 1995). Fewer people and businesses would evade, no doubt, if record-keeping were more mechanical. Less corruption would probably result if employers' records had to undergo the scrutiny of cross-checks and audits.

Some controversial social security reforms would target the problem of evasion in specific groups. First, sharing the contributions of married couples rather than granting an automatic spousal benefit would remove the incentive not to pay social security taxes on the lower-earning spouse's earnings. In systems that award benefits based on earnings or contributions, whether they be notional accounts systems or defined contribution plans, the earnings or contributions of married couples could be combined in a single account and then split evenly at the time of retirement. This type of "earning sharing" or "contribution sharing" for married couples would alleviate the pure tax on the earnings of second earners in systems that automatically award benefits to wives based on the husband's earnings history. Such a scheme would also go a long way toward providing benefits for part-time workers or stay-at-home parents who take care of the family while the other spouse works outside the home. Particularly in a country such as the United States where divorce rates are so high, earning sharing would mean that women would be less likely to end their lives in poverty.

A second potential reform might be to levy lower payroll tax rates on workers under age 25. This could reduce the temptation for employers to hire younger people "off the books" while they are in entry jobs and receiving training. Because the payroll tax is generally set as a flat rate, it repre-

sents a large percentage of the low wages typically received by these younger workers. Implementing such a policy in developing countries could reduce the size of the informal sector, and even in developed countries, reduced payroll taxes for younger workers could enhance youthful compliance and set the stage for compliance throughout their working years.

A third idea is to have governments match tax contributions for workers with wages under a minimum level, rather than setting a single contribution rate across all workers. The Mexican government contributes one peso per day to the accounts of all contributors, and the Czech Republic has a small matching scheme as well. To target low-wage workers, governments might contribute one-quarter of the payroll tax for workers at the minimum wage, and one-eighth of the payroll tax for workers at 1.25 times the minimum wage, phasing out to no matching contribution at 1.5 times the minimum wage. Encouraging people to participate in the social security system could be less expensive for the government than covering all of social assistance for nonparticipants in their old age and could dramatically reduce evasion.

Finally, some countries have chosen to establish separate social security systems for the self-employed with lower contribution rates; of course, retirement benefits are commensurably lower as well. The rationale for such treatment is that the self-employed sometimes perceive that they are unduly burdened with both halves of the payroll tax, though most evidence indicates that the employer share of payroll taxes is borne by the employee in the form of lower wages (Gruber 1995).

Conclusion

Social security evasion occurs when participants perceive taxes paid will generate little or no payoff in the future. It also occurs when workers value extra pay today more heavily than future benefits in retirement, and when they can earn better rates of return by investing by themselves in private markets. In these cases, the social security tax becomes distortionary, and people try to avoid or evade paying the contribution. Social security administrators face a difficult task, particularly when they lack the resources and/or the political will to detect and punish noncompliance, yet they are responsible for paying promised benefits. Corruption and fraud among tax administrators and tax collectors are also sometimes problems.

No single policy prescription will eliminate evasion in all social security programs. But careful design can encourage participation in the system, thereby helping to assure long-term solvency of the system, desirable effects on saving, labor supply and output, and popular support. Encouraging compliance is an important concern for social security reform in the United States. Serious enforcement and the attitude of taxpayers and administrators also play important roles. But striving for a balance between enforcement and tolerance is essential. Public as well as private costs of enforce-

ment must be weighted against other policy goals such as fairness, efficiency, and transparency. Maintaining credibility in the government social security program depends on the willingness of taxpayers to forgo wages today to receive benefits in the future.

The author gratefully acknowledges support from the World Bank, where she was a Visiting Fellow while writing an earlier version of this chapter. The views expressed are those of the author alone and not those of the Congressional Budget Office or the World Bank. The author would like to thank Olivia Mitchell as well as Anita Schwarz, David Lindeman, Estelle James, Kent Smetters, Jan Walliser, and many others involved in pensions at the World Bank for helpful discussions.

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