Some Taxing Facts About Lotteries

In 1987, 22 states—encompassing 60 percent of the U.S. population—had lotteries. Per capita lottery ticket sales averaged $88 in 1985, up from $23 in 1975, and net revenues from lotteries were $30 per capita.

The transfer of these revenues to state treasuries is an implicit tax on lottery bettors, and that tax is "decidedly regressive," an NBER study concludes. Furthermore, the implicit tax rate on lottery purchases is higher than the total tax on cigarettes or alcohol, according to NBER Research Associate **Charles Clotfelter** and **Philip Cook.**

In **Implicit Taxation in Lottery Finance** (*NBER Working Paper No. 2246*), Clotfelter and Cook report that state lotteries differ in their generosity. New York, the least generous, pays out only 44 percent of lottery sales in prizes, while Massachusetts, the most generous, pays out 55 percent. Operating expenses range from 8 percent of sales in Illinois and Maryland to 24 percent in New Hampshire. And net revenues—which can be thought of as an implicit tax on lottery players—range from 28 percent in New Hampshire to 47 percent in New York.

Clotfelter and Cook observe that since "average lottery expenditures exhibit no consistent relationship to income," the implicit tax on those expenditures (as a percentage of income) generally falls as incomes increase. For example, average yearly lottery expenditures in California in 1986 fell from 1.4 percent of income in the lowest income class (under $10,000) to only 0.1 percent in the $50,000–$60,000 class. One exception to this conclusion is lotto games, in which players are asked to pick six winning numbers from a larger set. Clotfelter and Cook find that lotto expenditures, in the presence of very large jackpots, rise with income in low- and middle-income classes.

Further, Clotfelter and Cook calculate that "in the United States the average rate of the implicit tax on gross lottery purchases, counting federal and state taxes, is about 40 percent." In contrast, the 1985 combined tax rate was 29.6 percent on liquor and 33.2 percent on tobacco products.

> **"The implicit tax rate on lottery purchases is higher than the total tax on cigarettes or alcohol."**

Based on a 1984 Maryland survey, the economists also find that blacks spend an average of $4.50 more per week on lottery tickets than whites with comparable income and education do. Over 40 percent of the lowest-income blacks bet over $10 a week, compared to less than 10 percent of the lowest-income whites. And, although lottery expenditures tend to fall as education increases, this effect was significant only for the whites in the survey. Men spend more than women, Clotfelter and Cook find, and the elderly spend the least on lottery products. Finally, lottery spending is highly concentrated. That is, less than 1 percent of the population buys 18 percent of lottery tickets, according to a 1986 California survey.

Smoking and Social Security

Between 1965 and 1983, the percentage of smokers dropped from 52 to 35 for men and 35 to 30 for women. According to a new study by NBER Research Associate **John Shoven, Jeffrey Sundberg,** and **John Bunker,** such declines in smoking eventually will result in hundreds of billions of dollars in increased outlays for the Social Security system.

In **The Social Security Cost of Smoking** (*NBER Working Paper No. 2234*), Shoven, Sundberg, and Bunker report that an estimated 273,000 Americans died of smoking-related diseases in 1982; 44 percent of the deceased were under 65 and presumably did not collect their Social Security retirement benefits. The authors estimate that smoking costs men about $20,000 and women about $10,000 in expected net Social Security benefits. Therefore, every decrease in the number of smokers in American society will increase the liability of the Social Security system.

In this paper, Shoven and his coauthors calculate the Social Security taxes, benefits, and transfers for 100,000 men born in 1920 and 100,000 women born in 1923. Hypothetically, the retirement age is 65, and benefits are based on the 1985 Social Security laws. If no one born in 1920 had smoked, they estimate, the cost to the system would have been $14.5 billion higher. For single men with median wages, nonsmokers receive a net transfer of $3436 from the system, while smokers receive $17,782 less than they contribute; the difference is over $20,000. Even if they live past age 65, smokers will still receive $14,500 less than nonsmokers in net transfer from Social Security. For single women with median earnings, the dollar difference between smokers and nonsmokers is more than $9000 conditional on reaching age 20, and about $6500 conditional on reaching age 65.

"Declines in smoking eventually will result in hundreds of billions of dollars in increased outlays for the Social Security system."

Among one-earner couples, two smokers receive $29,467 less from Social Security than two nonsmokers do. If only the husband smokes, they receive $19,199 less; if only the wife smokes, they lose $9732 in benefits compared to nonsmokers.

For two-earner couples, the cost of smoking is even higher. Compared to nonsmoking couples, they lose $30,567 if both smoke, $19,950 if only the husband smokes, and $10,482 if only the wife smokes.

Characteristics of Hostile and Friendly Takeover Targets

In 1980, 454 firms on the *Fortune* 500 list were publicly traded. Between 1981 and 1985, 82 of them were acquired by other firms or by their own managements. Of these 82 acquisitions, 40 began with hostile takeover attempts and 42 were friendly.

In a new NBER study, **Randall Mørck, Andrei Shleifer,** and **Robert Vishny** find that the stock market value in relation to the replacement costs of tangible assets is lower for the targets of hostile takeovers than for the targets of friendly takeovers. They also find that hostile targets had grown more slowly than friendly targets, invested less of their earnings, and were less likely to have founding families in top management or directors who owned a large fraction of their stock.

The authors conclude that hostile targets are sought by firms that hope to improve their operations. In contrast, acquirers in friendly takeovers often hope to combine the operations of the two firms in order to increase their market power, combine R and D labs or marketing networks, or otherwise benefit from economies of scale. However, the hostility or friendliness of a takeover sometimes reflects golden parachutes or other monetary incentives offered to management. Moreover, some friendly takeovers occur because of the needs of the founding families.

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In **Characteristics of Hostile and Friendly Takeover Targets** (*NBER Working Paper No. 2295*), Mørck, Shleifer, and Vishny report that the total value of the stock of hostile targets averaged only 52 percent of their physical assets in 1980, compared with 80 percent for friendly targets and 85 percent for all publicly traded companies on the *Fortune* 500. Although the stock market was depressed for all types of firms in 1980, the authors suggest that the relatively low price of the hostile targets implies that they were not well run.

Mørck, Shleifer, and Vishny also find that 41 percent of the friendly targets have members of the firm's

founding family present in top management, versus 24 percent for all the firms in their sample and 10 percent for hostile targets. The directors of friendly targets also owned a substantially larger fraction of the firm's stock than directors of those other firms did. Median ownership by directors was 14 percent for friendly targets but only 4 percent for hostile targets and for the sample as a whole. Twelve of the friendly acquisitions took place because the founder wanted to retire or because his family wanted to sell the business.

Mørck, Shleifer, and Vishny define a takeover as hostile if the initial bid for the target was neither negotiated with its board prior to being made nor accepted by the board as made. The initial rejection by the target's board is taken as evidence of the bidder's hostility. Targets that are not classified as hostile are considered friendly.

What Latin Debtors Can Learn from Asian NICs

Many observers, including the International Monetary Fund and the World Bank, advise the debtor countries of Latin America to solve their problems through economic liberalization. Among the suggestions are: lowering barriers to imports; selling state enterprises to the private sector; and generally reducing government intervention in the economy. However, a new study by NBER Research Associate **Jeffrey Sachs** reports that rapid liberalization was not central to the strategies of the successful economies of East Asia: the newly industrializing countries (NICs), including Japan, Korea, and Taiwan.

In **Trade and Exchange Rate Policies in Growth-Oriented Adjustment Programs** (*NBER Working Paper No. 2226*), Sachs points out that Japan, Korea, and Taiwan began the postwar period with hyperinflation and extreme economic instability. All three countries brought the hyperinflation under control long before export-led growth began or there was any significant liberalization of trade or investment. Moreover, the United States helped to finance their stabilizations. Between 1955 and 1959, U.S. foreign aid paid for 30 to 45 percent of Korean and Taiwanese imports, and spending by the U.S. military in Japan during the early 1950s helped the country with its stabilization.

Sachs also observes that Korea, Taiwan, and, to a lesser extent, Japan all relied on exports as the basis for their dramatic growth. Private firms were given large incentives to sell abroad. However, flows of goods and capital were tightly controlled by the governments of all three countries. Imports were strictly limited, often by quotas. Foreign exchange, and often capital, were rationed by government ministries, not allocated by the marketplace.

In Korea and Taiwan, state enterprises were a key part of the growth strategy in the mid-1970s, accounting for 25 percent and 35 percent of total fixed investment, respectively. (By comparison, state enterprises in Argentina, Brazil, and Mexico made 21, 23, and 27 percent of total fixed investments.)

Particularly in Japan and Korea, the government often fostered individual private firms to develop major industries and rewarded them with interest subsidies and other benefits. Thus, although the Asian NICs have followed an "outward orientation" to achieve their remarkable growth, they certainly did not get high growth underway through a dramatic liberalization to let free markets determine imports, exports, or the allocation of capital or foreign exchange.

Finally, Sachs emphasizes that relatively equal income distributions in Japan, Korea, and Taiwan allowed their governments the freedom to adopt policies that promoted efficiency and growth. In those three countries in recent years, the average income received by the richest 20 percent of households was, respectively, 4.3, 7.9, and 3.7 times the income received by the poorest 20 percent of households. By contrast, in Argentina, Brazil, and Mexico, the richest 20 percent received 11.4, 33.3, and 19.9 times as much as the poorest 20 percent.

"Japan, Korea, and Taiwan...brought the hyperinflation under control long before export-led growth began or there was any significant liberalization of trade or investment."

Sachs notes that conflicts over the distribution of income cause many of the economic problems in Latin America. The wealthy can block higher taxes, but they cannot enforce spending cuts without provoking political unrest. As a result, Latin governments tend to run large budget deficits, which were financed in part by borrowing abroad before 1982 and are now often financed by printing money. Therefore, in order to bring down inflation and stabilize their economies, these countries must reduce their budget deficits.

The standard advice from international organiza-

tions is to cut budget deficits by cutting spending. However, government spending is not particularly high in Latin America. In Japan, Korea, and Taiwan, government spending was 19, 20, and 28 percent of GNP in 1982, compared with 22, 22, and 32 percent for Argentina, Brazil, and Mexico. Moreover, about one-third of government spending in Argentina and Mexico pays the interest on the public debt.

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