Example 17.2
Shadow Economies Throughout the World

As noted in Chapter 17, private information can turn the mainstream economic view of markets on its head. Markets have priority over the government in the mainstream economic theory of the government sector, and well they should. Markets form easily – if a demand for some good or service develops, you can be sure that some people will be willing to start firms and supply it. And if markets are competitive they work remarkably well. They satisfy the process equity goal of equal access or opportunity and in most cases they generate an efficient allocation of resources. Therefore, government intervention in the economy is justified only in those relatively few instances when markets fail.

When people have private information, however, the ease with which markets form can be a serious problem for governments. People have powerful incentives to exploit their private information and bring their market transactions into the so-called shadow or underground economy, out of the view of government officials. They do so to avoid paying taxes on these transactions or to escape the costs and bother of adhering to government regulations, such as ensuring that working conditions are safe. The mainstream ideal that government is to act as an agent on behalf of the people is undermined when people and firms can conceal their incomes, profits, and other information that governments need to promote social welfare in a democratic, capitalist society. An important question for any nation, then, is how large is its shadow economy. If it is quite large, then its government has little chance of acting in the manner envisioned by mainstream public sector theory.

THE SHADOW ECONOMIES IN 145 COUNTRIES

In a 2006 paper, Friedrich Schneider published his estimates of the size of the shadow economies in 145 countries in 2000, 2002, and 2003. He divided the countries into four groups, representing all stages of economic development: the 21 industrialized market countries that are members of the Organization for Economic Development (OECD); 96 developing countries; 25 transition countries; and 3 communist countries.

An immediate issue with such an exercise is how to define the shadow economy. At its broadest, the shadow economy would include three types of activities: all legal market activity that, if it were not hidden from the government authorities, would be included in a country's national income and produce accounts; all illegal or criminal activity; and all barter transactions. Schneider chose the narrowest definition, including only the first type of hidden but otherwise legal market activity.

A second issue is how to measure the size of the shadow economy, since no direct measure is possible. Schneider chose to use a highly sophisticated regression technique called DYMIMIC (dynamic multiple-indictors, multiple causes estimation), which was developed to estimate so-called latent variables such as shadow economies that cannot be measured directly. The technique need not concern us here, other than to note that Schneider himself warns that it is not without its problems. He cautions that his estimates may have a wide margin for error. Nonetheless, if the estimates are even roughly accurate, they paint a striking picture of the importance of shadow economies throughout the world, and one that is distressing to public sector economists. At the very least, the relative magnitudes of the estimates across the four groups of countries undoubtedly give the right ordering of the importance of shadow economics within each group.[1]

Schneider reports the shadow economy as a percentage of official GDP for each country, for 2000, 2002, and 2003. A summary of his estimates is as follows:[2]

Developing Countries

Africa (37 countries)

Year	2000	2002	2003
Group average	41.3%	42.3%	43.2%

Three highest percentages in 2003	**Zimbabwe** 63.2%	**Tanzania** 60.2%	**Nigeria** 59.4%
Three lowest percentages in 2003	**South Africa** 29.5%	**Lesotho** 33.3%	**Namibia** 33.4%

Asia (28 countries)

[1] F. Schneider, 'Shadow Economies and Corruption All Over the World: What Do We Really Know?',' *CESifo Working Paper No. 1086*, Category 1: Public Finance, September 2006. A description of DYMIMIC is on pp. 47-51.
[2] *Ibid.*, pp. 21-29.

Year	2000	2002	2003
Group average	28.5%	29.5%	30.4%

Three highest percentages in 2003	**Thailand** 54.1%	**Cambodia** 52.4%	**Sri Lanka** 47.2%
Three lowest percentages in 2003	**Singapore** 13.7%	**Hong Kong** 17.2%	**Saudi Arabia** 19.7%

Central and South America (21 countries)

Year	2000	2002	2003
Group average	41.4%	42.2%	43.4%

Three highest percentages in 2003	**Bolivia** 68.3%	**Panama** 65.3%	**Peru** 60.9%
Three lowest percentages in 2003	**Chile** 20.9%	**Costa Rica** 27.8%	**Argentina** 28.9%

South West Pacific Islands (10 countries)

Year	2000	2002	2003
Group average	31.7%	32.6%	33.4%

Three highest percentages in 2003	**Tonga** 37.4%	**Solomon Islands** 35.3%	**Kiribati** 35.3%
Three lowest percentages in 2003	**Marshall Islands** 29.6%	**Palau** 30.0%	**Maldives** 32.0%

Transition Countries (25 countries: Eastern and Central Europe, former Soviet Union)

Year	2000	2002	2003
Group average	38.1%	39.1%	40.1%

Three highest percentages in 2003	Georgia 68.0%	Azerbaijan 61.3%	Ukraine 54.7%
Three lowest percentages in 2003	Czech Republic 20.1%	Slovak Republic 20.2%	Hungary 26.2%

OECD Countries (21 countries)

Year	2000	2002	2003
Group average	16.8%	16.7%	16.3%

Three highest percentages in 2003	Greece 28.2%	Italy 25.7%	Spain 22.0%
Three lowest percentages in 2003	United States 8.4%	Switzerland 9.4%	Japan 10.8%

Communist Countries (3 countries)

Year	2000	2002	2003
Group average	19.8%	21.1%	22.3%

Percentages in 2002	Laos 33.4%	Vietnam 17.4%	China 16.6%

Overall

Year	2000	2002	2003
Average for all 145 Countries:	33.6%	34.5%	35.2%

These estimates are indeed sobering for mainstream public sector economists. Example 17.1 presents an IRS estimate that, in 1998, U.S. citizens and businesses underpaid all federal taxes by $282 billion dollars, 15% of the tax liabilities that were due. Yet according to Schneider's estimates, the U.S. has the smallest shadow economy as a percentage of GDP of all the 145 countries, only about a quarter as large as the worldwide average. One can only imagine the difficulty governments would have collecting taxes in countries with shadow economies equal to a third or more of their official GDP. Recall, also, that Schneider chose the narrowest definition of the shadow economy. Another distressing feature of Schneider's estimates is that the shadow economies were growing, on average, from 2000 to 2003 in all groups of countries, with the single exception of the OECD countries.

CORRUPTION AND SHADOW ECONOMIES

In another study, Axel Dreher and Schneider (DS) estimated how corruption is affected by the size of the shadow economy, using data on 70 countries from 1994 to 2002.[3] They used as measures of corruption a number of different indices of corruption published by various organizations. One example is Transparency International's Corruption Perceptions Index, which combines rankings of corruption by a number of independent individual experts and agencies that measure corruption within countries. The experts' rankings consider such corrupt practices as kickbacks on public projects, bribes to public officials, and embezzlement of public revenues. Some experts also include measures of good governance in their rankings, such as the accountability of public officials.[4]

DS found that corruption and shadow economies are substitutes (inversely related) in the high-income countries and complements (directly related) in the low-income countries. The high-income countries have established a rule of law that includes enforcement of contracts, and they provide excellent police protection. Therefore, people have less incentive to resort to the shadow economy. Those who do go underground are generally small firms and moonlighting craftsman. Bribes and the like are mostly used to obtain preferential treatment in the official economy, such as to obtain licenses. In the low-income countries, in contrast, people tend to transact either in the official or in the shadow economy, but not both. Here bribes and other corrupt practices are mostly used to avoid detection and punishment when operating in the shadow economy, so that corruption and the shadow economy go hand-in-hand.

CONCLUDING COMMENTS

Among Schneider's conclusions from his 145-country study is the observation that countries with large shadow economies may be reluctant to go after the people who operate there, for a number of reasons. He notes that in the average country, about one third of all income is earned in the shadow economy and about two thirds of this income is then spent in the official economy. In addition, people who work in the shadow

[3] A. Dreher and F. Schneider, 'Corruption and Shadow Economy: An Empirical Analysis,' Discussion Paper, Department of Economics, University of Linz, 2006.
[4] A detailed description of the Corruption Perceptions Index is contained in Professor Dr. Johann Graf Lambsdorff, *The Methodology of the Corruption Perceptions Index*, 2008, Transparency International and University of Passau, August 2008. It is available at www.transparency.org/policy_research/surveys_indices/cpi.

economy have less time to engage in disruptive political activities.[5] The first consideration underscores the point made in Chapter 17 that a society may not want to pursue and punish cheaters if the cheaters count in the social welfare function, because the cheaters gain utility from cheating. This is even more likely if the cheaters are relatively poor, as they are in many of the world's economies. Nonetheless, the fact remains that countries with shadow economies equal to a third and more of GDP will hardly be able to pursue effective government policies as prescribed by the mainstream theory of the public sector. Their governments will surely not be able to promote the public interest in efficiency and equity while acting as agents on behalf of the people. They will operate quite differently from what one expects in an open, democratic society.

[5] Schneider, *op. cit*., p. 35.