Hiding in the Shadows
The Growth of the Underground Economy

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with Dominik Enste

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Preface

The Economic Issues series aims to make available to a broad readership of nonspecialists some of the economic research being produced on topical issues by IMF staff. The series draws mainly from IMF Working Papers, which are technical papers produced by IMF staff members and visiting scholars, as well as from policy-related research papers.

This Economic Issue is based on IMF Working Paper 00/26, “Shadow Economies Around the World: Size, Causes, and Consequences,” February 2000. Citations for the studies reviewed are provided in the original paper, which readers can purchase ($10.00) from the IMF Publication Services, or download from www.imf.org. Rachel Weaving prepared the text for this pamphlet. Some of the data, including the sample size, has been updated by Professor Schneider for this pamphlet.
Shadow Economies

A factory worker has a second job driving an unlicensed taxi at night; a plumber fixes a broken water pipe for a client, gets paid in cash but doesn’t declare his earnings to the tax collector; a drug dealer brokers a sale with a prospective customer on a street corner. These are all examples of the underground or shadow economy—activities, both legal and illegal, that add up to trillions of dollars a year that take place “off the books,” out of the gaze of taxmen and government statisticians.

Although crime and shadow economic activities have long been a fact of life—and are now increasing around the world—almost all societies try to control their growth, because of the potentially serious consequences:

• A prospering shadow economy makes official statistics (on unemployment, official labor force, income, consumption) unreliable. Policies and programs that are framed on the basis of unreliable statistics may be inappropriate and self-defeating.

• The growth of the shadow economy can set off a destructive cycle. Transactions in the shadow economy escape taxation, thus keeping tax revenues lower than they otherwise would be. If the tax base or tax compliance is eroded, governments may respond by raising tax rates—encouraging a further flight into the shadow economy that further worsens the budget constraints on the public sector. (On the other hand, at least two-thirds of the income earned in the shadow economy is immediately spent on the official economy, resulting in a considerable positive stimulus effect on the official economy.)
• A growing shadow economy may provide strong incentives to attract
domestic and foreign workers away from the official economy.

What Is the Shadow Economy?

Also called the underground, informal, or parallel economy, the
shadow economy includes not only illegal activities but also unrep-
ported income from the production of legal goods and services,
either from monetary or barter transactions. Hence, the shadow
economy comprises all economic activities that would generally be
taxable were they reported to the tax authorities. See Table 1.

A precise definition of the shadow economy, however, is quite
difficult because the shadow economy develops all the time, adjust-
ing to changes in taxation and regulations.

Table 1. Types of Underground Economic Activities

<table>
<thead>
<tr>
<th>Type of Activity</th>
<th>Monetary Transactions</th>
<th>Nonmonetary Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>ILLEGAL ACTIVITIES</td>
<td>Trade in stolen goods; drug dealing and manufacturing; prostitution; gambling; smuggling; fraud.</td>
<td>Barter of drugs, stolen, or smuggled goods. Producing or growing drugs for own use. Theft for own use.</td>
</tr>
<tr>
<td>Tax Evasion</td>
<td></td>
<td></td>
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<tr>
<td>Tax Avoidance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LEGAL ACTIVITIES</td>
<td>Unreported income from self-employment. Wages, salaries, and assets from unreported work related to legal services and goods</td>
<td>Barter of legal services and goods. All do-it-yourself work and neighbor help.</td>
</tr>
<tr>
<td>Tax Evasion</td>
<td>Employee discounts, fringe benefits.</td>
<td></td>
</tr>
<tr>
<td>Tax Avoidance</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

How Large Is the Shadow Economy?

Estimating the size of the shadow economy is difficult. After all, people engaged in underground activities do their best to avoid detection. But policymakers and government administrators need information about how many people are active in the shadow economy, how often underground activities occur, and the size of these activities, so that they can make appropriate decisions on resource allocation.

Thus, economists and government statisticians have made a variety of calculations to gauge how large the shadow economy is. To estimate the size of the shadow economy, researchers have focused on a sample of 84 countries, using a variety of estimation methods. The results show that for all 84 countries investigated, value added in the shadow economy has reached a remarkably large amount.

Table 2. Shadow Economy as Percent of Official GDP, 1988–2000

<table>
<thead>
<tr>
<th>Country Group</th>
<th>Percent of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developing</td>
<td>35 – 44</td>
</tr>
<tr>
<td>Transition</td>
<td>21 – 30</td>
</tr>
<tr>
<td>OECD</td>
<td>14 – 16</td>
</tr>
</tbody>
</table>

The ranges reflect the different estimation methods used by different sources. Common estimation methods are described later in this booklet.

Table 2 shows average estimates for the three main country groups—developing countries, transition economies, and 21 advanced economies, the last all members of the Organization for Economic Cooperation and Development (OECD). The comparisons among countries remain somewhat crude because they are based on different estimation methods.
Developing countries

According to a survey conducted in 1998–99 in Africa, Nigeria and Egypt had the largest shadow economies, equivalent to 77 percent and 69 percent of GDP, respectively; South Africa, by contrast, had a shadow economy of only 11 percent of GDP. In Asia in the same period, Thailand ranked number one with a shadow economy of 70 percent of GDP; Hong Kong SAR and Singapore had the smallest shadow economies, both at 14 percent of GDP. In Latin America in 1998-99, the biggest shadow economy was in Bolivia, at 67 percent of GDP, and the smallest was in Chile, at 19 percent.

Transition countries

Among the states of the former Soviet Union in 1998–99, Georgia’s shadow economy was the largest, at 64 percent of GDP; Russia’s was 44 percent of GDP; and Uzbekistan’s was the smallest, at 9 percent. Among the transition countries of central and eastern Europe in the same period, Bulgaria’s was the largest, at 34 percent of GDP, and Slovakia’s the smallest, at 11 percent.

OECD countries

In the 21 OECD countries in 1999–2001, Greece and Italy had the largest shadow economies, at 30 percent and 27 percent of GDP, respectively. In the middle group were the Scandinavian countries, and at the lower end were the United States and Austria, at 10 percent of GDP, and Switzerland, at 9 percent.
How Much Has the Shadow Economy Grown?

In most transition and all investigated OECD countries, the shadow economy has been growing rapidly. (The trend in developing countries as a group cannot be judged accurately, for lack of data.) Shadow economies grew bigger between 1990 and 1998 in the states of the former Soviet Union—from about a fourth to more than a third of GDP—though in central and eastern European states they remained almost stable at about a fifth of GDP.

In the 21 OECD countries surveyed the shadow economy has been growing for 30 years—doubling from less than 10 percent of GDP in most of these countries in 1970 to 20 percent or more of GDP by 2000 in Belgium, Denmark, Italy, Norway, Spain, and Sweden. Growth has also occurred in countries with smaller shadow economies; in the United States, for example, the shadow economy doubled from 4 percent of GDP in 1970 to 9 percent in 2000.

For the OECD countries, the growth in shadow economies has been fastest in the 1990s: in the group as a whole, the shadow economy rose from 13 percent in 1990–93 to 17 percent in 1999–2000. Late in the decade, the shadow economy was still growing in most OECD countries.

Shadow Labor Force

Participation in the shadow labor market has also been rising. The shadow labor market includes all cases where employees or employers, or both, hold a shadow economy position producing for the market—regardless of whether they also have officially recorded positions. Some workers in the shadow economy take on second jobs after or even during their regular hours in official employment. Others work only in the shadow economy, either because they find it more profitable to do so or because they are barred from the official economy—as is the case for illegal immigrants, for example.

In the European Union in the late 1990s, 20 million people engaged in shadow economy activities. In all European OECD countries combined, about 35 million people did so. In some individual
countries, the shadow economy labor force was very large: in Italy, 30–48 percent of the total labor force (1997); Spain, 12–32 percent (1997–98); and Sweden, 20 percent (1997–98). In many countries, these high shares coexisted with high official rates of unemployment.

In the European OECD countries, the shadow labor force has grown over the last two decades. In Denmark, for example, the share of the total labor force engaged in the shadow economy doubled in 15 years, from 8 percent in 1980 to 15 percent in 1994. The pattern was similar in Germany and France: in Germany, the share was relatively stable at 8–12 percent in 1974–82, but over the next 16 years it doubled, to 22 percent in 1998; in France, the share was 3–6 percent in 1975–82 but doubled to 6–12 percent in 1997–98.

Why Are Shadow Economies Growing?

Countries with relatively low tax rates, fewer laws and regulations, and a well-established rule of law tend to have smaller shadow economies.

Macroeconomic and microeconomic modeling studies based on data for several countries suggest that the major driving forces behind the size and growth of the shadow economy are an increasing burden of tax and social security payments, combined with rising restrictions in the official labor market. Wage rates in the official economy also play a role.

Taxes and social security contributions

Taxes and social security contributions add to the cost of labor in the official economy and hence are key factors driving the growth
of the shadow economy. The bigger the difference between the total cost of labor in the official economy and the after-tax earnings from work, the greater the incentive for employers and employees to avoid this difference and participate in the shadow economy. The difference can be very large; in Germany and Austria, for example, the tax and social security payments by firms and their workers amount to the wages that workers effectively earn. Since the difference depends broadly on the social security system and the tax regime, these are key determinants of the shadow economy.

Several studies have found strong evidence that the tax regime influences the shadow economy. In Austria, the burden of direct taxes (including social security payments) has been the biggest influence on the growth of the shadow economy, followed by the number of regulations affecting firms and workers, and the complexity of the tax system. Other studies show similar results for the Scandinavian countries, Germany, and the United States. In the United States, analysis shows that as the marginal federal personal income tax rate increases by one percentage point, other things being equal, the shadow economy grows by 1.4 percentage points. Also in the United States, holding down the top marginal income tax rate may prevent further growth of the shadow economy.

A study of Quebec City in Canada shows that people are highly mobile between the official and the shadow economy, and that as net wages in the official economy go up, they work less in the shadow economy. This study also emphasizes that where people perceive the tax rate as too high, an increase in the (marginal) tax rate will lead to a decrease in tax revenue.

**State regulations**

Government regulations can substantially raise the cost of labor to firms in the official economy. Such regulations include license requirements, labor market regulations, trade barriers, and labor restrictions for foreigners. Employers in the official economy who shift most of the associated additional costs on to their employees give them a strong incentive to move into the shadow economy.
Several studies show that countries with more regulation of their economies have larger shadow economies. For example, among 84 developing, transition, and advanced economies, a one point increase in a regulation index (ranging from 1 to 5) is associated with a 10 percent increase in the shadow economy.

Labor market regulations, in particular, have a major effect on employers’ costs and workers’ incentives. In many OECD countries, high total labor costs are an important cause of high official rates of unemployment, and, simultaneously, of expansion in the shadow economy, which employs many people who are officially unemployed.

Some governments (France, for example) and labor unions (for example, in Germany) have restricted the hours that people may work in the official economy, in an attempt to reduce unemployment. The intent is to redistribute a limited quantity of work more fairly, but enforced reductions of work in the official economy may push people into the shadow economy. For example, after Volkswagen in Germany reduced its working hours, noticeably more reconstruction and renovation of houses took place around where the firm’s employees lived than in other areas.

**Governance**

Shadow economies tend to be smaller in countries where government institutions are strong and efficient. Indeed, some studies have found that it is not higher taxes per se that increase the size of the shadow economy, but ineffectual and discretionary application of the tax system and regulations by governments.

A heavily regulated economy combined with weak and discretionary administration of the law provides especially fertile ground for shadow activities. These are also the conditions under which corruption flourishes.

Few studies empirically investigate the relationship between corruption and the shadow economy, but those that do so observe that countries with more corruption have relatively larger shadow economies. Corruption is essentially the abuse of public power for private benefit.
Activities that provide opportunities for corruption include:
- regulation or licensing to engage in particular activities (opening a shop or driving a taxi, for example);
- land zoning and other similar official decisions;
- administration of, or ready access to, publicly provided goods and services;
- control over decisions regarding procurement of public investment contracts;
- control over provision of tax incentives; and
- control over hiring and promotion within the public sector.

Several studies have found a direct correlation between a reduction of the level of corruption in a country and the extent of the shadow economy. All studies found that more corruption resulted in a larger shadow economy.

One of these studies points out that “wealthier countries of the OECD, as well as some in Eastern Europe, find themselves in the good equilibrium of relatively low tax and regulatory burden, sizable revenue mobilization, good rule of law and corruption control, and a (relatively) small unofficial economy. By contrast, a number of countries in Latin America and the former Soviet Union exhibit characteristics consistent with a bad equilibrium: tax and regulatory discretion and burden on the firm is high, the rule of law is weak, and there is a high incidence of bribery and a relatively high share of activities in the unofficial economy.”¹

Effects on the Official Economy

A change in the size of the shadow economy may be reflected in a change in:

- Monetary indicators. Shadow economy transactions tend to be in cash. Rising activity in the shadow economy is likely to push up the demand for currency.
- Labor market participation rates and working hours. As growing numbers of people work in the hidden sector, participation rates in the official economy may fall. Similarly, as people work more hours in the hidden sector, hours worked in the official economy may fall.
- Output statistics. As the shadow economy grows, production inputs, especially labor, move at least partly out of the official economy. This displacement may depress the official growth rate of the economy.

Effects on economic growth

Theoretical and empirical studies do not conclusively explain how an increase in the shadow economy or informal sector affects economic growth. According to some, the shadow economy depresses the growth of GDP. They contend that shrinking the shadow economy will increase tax revenues, stimulating a rise in public spending, especially on infrastructure and services that support production expansion, leading to a rise in the overall economic growth rate.

The contrary view is that the informal sector is more competitive and efficient than the formal sector, and thus that an increase in the shadow economy will stimulate overall economic growth.

Certainly empirical studies have shown that at least two thirds of the income earned in the shadow economy is quickly spent in the official economy. And in Germany and Austria, two thirds of the value added produced in the shadow economy would not be produced at all if the shadow economy did not exist. In the United Kingdom during 1960-84, earnings in the hidden economy significantly raised consumer spending, especially on durable goods and services. The
positive effects of such expenditures on economic growth and on revenues from indirect taxes certainly bear keeping in mind.

**Effects on public services**

Transactions in the shadow, rather than the official, economy keep state revenues lower than they otherwise would be, and in turn reduce governments’ ability to provide goods and services. Governments may respond by raising individual and corporate tax rates. Higher taxation—especially when combined with a perceived deterioration in the quality of public goods and public administration, or under investment in public infrastructure—motivates firms and workers even more strongly to move into the shadow economy, perpetuating the cycle.

**Social transfers**

People receiving generous unemployment benefits have a major disincentive to work in the official economy. These transfers may significantly raise their overall income and do not prevent them from working in underground activities.

**Measuring the Shadow Economy**

Analysts and policymakers need to know that estimates of the shadow economy can vary widely depending on the estimation method. There is no “best” estimation method; each approach has strengths and weaknesses, and yields its own insights and results. Table 3 describes common methods. The *currency demand* and the *latent variable* approach are the most widely used.
### Table 3. Ways of Measuring the Shadow Economy: Different Methods

<table>
<thead>
<tr>
<th>Method</th>
<th>Main Features</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DIRECT APPROACHES</strong></td>
<td></td>
</tr>
<tr>
<td>Sample survey</td>
<td>Estimates size of shadow economy from survey data.</td>
</tr>
<tr>
<td>Tax audit</td>
<td>Estimates size of shadow economy from audit measurements of undeclared taxable income.</td>
</tr>
<tr>
<td><strong>INDIRECT APPROACHES</strong></td>
<td></td>
</tr>
<tr>
<td>National accounting statistics</td>
<td>Estimates size of shadow economy on basis of the discrepancy between income and expenditure statistics in national accounting or in individual data.</td>
</tr>
<tr>
<td>Labor force statistics</td>
<td>Estimates growth in shadow economy on basis of decline in labor participation in the official economy, assuming the labor force has a constant participation rate overall.</td>
</tr>
<tr>
<td>Transactions</td>
<td>Uses data on the overall volume of monetary transactions in the economy to calculate total nominal (unofficial plus official) GDP, then estimates size of shadow economy by subtracting official GDP from total nominal GDP.</td>
</tr>
<tr>
<td>Currency demand</td>
<td>Estimates size of shadow economy from the demand for cash, assuming shadow transactions are undertaken in cash and that an increase in the shadow economy will raise demand for cash.</td>
</tr>
<tr>
<td>Physical inputs</td>
<td></td>
</tr>
<tr>
<td>(electricity consumption)</td>
<td>Estimates growth of shadow economy from electricity consumption, assuming that electricity consumption is the single best physical indicator of overall economic activity. Subtracts the growth rate of official GDP from the growth rate of total electricity consumption and attributes the difference to the growth of the shadow economy.</td>
</tr>
<tr>
<td><strong>MODELS</strong></td>
<td></td>
</tr>
<tr>
<td>Latent variable approach</td>
<td>Estimates the size of the shadow economy as a function of observed variables that are assumed to influence the shadow economy—for example, the burden of taxation, the burden of government regulation—and of variables where shadow economic activities leave traces, like cash, official working time, unemployment, etc. Advantageous method because it considers multiple causes and effects simultaneously.</td>
</tr>
</tbody>
</table>

The comparisons emphasize that for a given country in a given period, different methods may give very different impressions of size and growth. They imply that decision makers should be careful if using estimates based only on a single method. They also stress the need for caution in making cross-country comparisons or comparisons over time within a country, where the estimates are derived using different methods.

**Implications for Action**

As mentioned earlier, an increase in the size of the shadow economy is likely to result in reduced state revenues, which in turn reduces the quality and quantity of publicly provided goods and services. Ultimately this can lead to an increase in tax rates for firms and individuals, quite often combined with a deterioration in the quality and administration of the public goods such as roads and hospitals provided by the government.

On the other hand, two thirds of the income earned in the shadow economy is immediately spent in the official economy. This can be a boost for the official economy and may lead to additional overall economic growth. The growth of the shadow economy therefore affects everyone. But it is difficult to evaluate whether the shadow economy ultimately affects the official economy in a positive or a negative way.

Governments can act to curb the shadow economy. Research shows that smaller shadow economies appear in countries with higher tax revenues that are achieved by lower tax rates (resulting in greater compliance), fewer laws and regulations combined with consistent enforcement, and less bribery facing companies.
The major driving forces behind the size and growth of the shadow economy appear to be an increasing burden of taxation and social security payments, combined with more pervasive state regulatory activities. Weak and arbitrary enforcement of laws and regulations encourages shadow economic activity; the findings emphasize the importance of the rule of law in curbing both corruption and associated shadow economic activity.

The findings contain some useful implications for policymakers:

- Even major reductions in tax rates will not substantially shrink the shadow economy, but they may be able to stabilize it.
- Marginal tax rates are more relevant to people’s shadow-economy work decisions than are average tax rates; replacing direct taxes with indirect taxes is unlikely to improve tax compliance.
- More frequent tax audits and heavier penalties for tax evasion may reduce the size of the shadow economy.
- Governments should put more emphasis on legalizing certain shadow economy activities, for example by liberalizing the labor market.
- Reforms that liberalize regulations and make the economy more competitive reduce the incentives for corruption, and encourage firms to move from the shadow economy into the official one.
- Governments should put emphasis on the rule of law and on the strict enforcement of a minimum necessary set of regulations, rather than on increasing the number of regulations.
The Economic Issues Series

1. *Growth in East Asia: What We Can and What We Cannot Infer.* Michael Sarel. 1996.


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Dominik Enste studied Economics, Sociology, and Social/Economic Psychology at the University of Cologne and at Trinity College, University of Dublin. He did his postgraduate studies at the Department for Economic Policy at the University of Cologne. He was a research scholar at the George Mason University (Center for Study of Public Choice) when he helped write this paper.

The full text of the original working paper, with supporting tables and graphs, can be found on the IMF website:

http://www.imf.org/EXTERNAL/PUBS/CAT/shortres.cfm