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# The Shadow Economy – An Expanding Field of Activity

by Eckhardt Wohlers, Hamburg\*

**The existence of a broad range of economic activities in the “shadow” of the official economy is nothing fundamentally new. However, there are signs that the shift into the shadow economy has been increasing considerably from the seventies onwards. Whereas growth in the “official” economy slowed down perceptibly, the shadow economy has clearly become a pronounced growth sector in the Federal Republic of Germany and in many other industrial countries.**

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Close examination of the shadow economy brings to light a host of problems, not least with the definition of the sector itself, for no uniform terminology has yet emerged. The term “shadow economy” is often used in a very broad sense to cover as many aspects as possible. It is generally assumed in this context that the economy has a dual structure, with “official” and hidden sectors. The “official” economy comprises those economic activities that are recorded in the statistics and reflected in official figures on the national product. The shadow economy encompasses all those activities that represent value added in the economic sense but do not find their way into calculations of the national product.<sup>1</sup>

According to this definition, the shadow economy covers firstly all those private economic activities that according to international convention are deliberately omitted from the national accounts. These are the productive activities of private households and self-help organisations to meet their own needs, and for that reason this part of the shadow economy is also called the self-sufficiency sector. As a rule, such activities oriented towards the direct meeting of needs are legal and free from taxation.

The shadow economy also includes all those activities that represent value added in the national accounting sense but are not reflected in the national product because they have been deliberately concealed and hence have evaded statistical capture.<sup>2</sup> There can be several reasons for concealment. For example, such activities always go hand in hand with the evasion of

taxes and other duties, which alone provides a sufficient reason. In addition, however, the activities themselves may be illegal, as in the case of moonlighting; in this instance tax evasion would simply be the consequence of concealment for other reasons.<sup>3</sup> This section of the shadow economy, concerned with gainful employment, is also called the underground economy.

The term “shadow economy” is sometimes used in a narrower sense, and is often synonymous with “underground economy”.<sup>4</sup> This may be useful in some lines of enquiry, as it certainly simplifies the estimation of the scale of hidden activities. However, a broader definition seems to be needed when it comes to analysing the causes, since in many instances the reasons for shifting private-sector activities from the “official” economy to the self-sufficiency sector or the underground sector appear to be identical. The same

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<sup>1</sup> This definition may be found, for example, in Dieter Cassel, Anja Caspers: Was ist Schattenwirtschaft? – Begriff und Erscheinungsformen der Second Economy, in: Wirtschaftswissenschaftliches Studium, No. 1/1984, pp. 2 f.; Enno Langfeldt: Ursachen der “Schattenwirtschaft” und ihre Konsequenzen für die Wirtschafts-, Finanz- und Gesellschaftspolitik, Kiel 1983, pp. 4 f.; Edgar L. Feige: Definitions and Measurement of the “Underground Economy” and the Full Compliance Budget Deficit, Paper presented at the Bielefeld Conference on “The Economics of the Shadow Economy”, 10-14 October 1983.

<sup>2</sup> See for example Bruno S. Frey, Hannelore Weck, Werner W. Pommerehne: Has the Shadow Economy Grown in Germany? An Exploratory Study, in: Weltwirtschaftliches Archiv, Vol. 118 (1982), p. 499.

<sup>3</sup> With regard to individual shadow economy activities, see the summaries in Dieter Cassel, Anja Caspers, op. cit., pp. 4 f.

<sup>4</sup> This definition is used, for example, by Bruno S. Frey, Hannelore Weck, Werner W. Pommerehne: Has the Shadow Economy Grown in Germany?, op. cit., p. 499; D. Blades: The Hidden Economy and the National Accounts, in: OECD Occasional Studies, Paris 1982, pp. 28 ff.

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applies to the consequences for the "official" economy. Hence, in the remainder of this article all activities entailing value added outside the "official" economy will be grouped together as the "shadow" economy, which therefore comprises both the self-sufficiency sector geared towards the direct meeting of private needs and the underground economy oriented towards gains.

### Size of the Shadow Economy

As activities in the shadow economy take place outside the "official" arena and are therefore not recorded statistically, the best that can be done is to make a rough estimate of their scale. The difficulties in this regard are considerable. There are major problems in assessing the value of activities in the self-sufficiency sector, a fundamental reason why this sector is largely excluded from the official statistics. Activities in the underground economy can, in most cases, be reconstructed only from the "traces" they leave in the official economy. Thus it is not surprising that the available estimates diverge fairly widely. Moreover, they relate primarily to the underground economy, as the self-sufficiency sector has attracted comparatively little interest.<sup>5</sup>

Questionnaires and sample surveys are not a suitable way of determining the size of the underground economy, for there is a danger that interviewees will attempt to mask the scale of their activities because of their illegality. They therefore reveal at best the tip of the iceberg. Even threats of prosecution will only marginally increase the degree of exposure. Estimates extrapolated from survey results should therefore be read as an indication of the lower limit; on this basis, the underground economy in Germany was equivalent to about 4½ % of official GNP in 1980.<sup>6</sup>

For this reason, measurements of the size and growth of the underground economy are based mainly on indirect methods, which concentrate on one specific aspect of the underground economy and consequently display their own particular advantages and disadvantages. They all calculate underground activities as a residual, thereby running the risk of including developments that are totally unrelated to the underground economy. Moreover, many of the methods can only recognise changes over time; if they are to gauge the size of the underground economy in a

**Table 1**  
**Estimates of the Size and Growth of the Underground Economy in the Federal Republic of Germany**

Method	Year	Value added as a percentage of gross national product	Author
National accounts	1974	5	Langfeldt
Currency demand	1965	4	Kirchgassner
	1980	11	
	1976	3.4-12.1	
Volume of transactions	1980	3.7-12.6	Langfeldt
	1965	3	
	1980	27	
Determinants	1960	3.7	Weck/ Pommerehne/ Frey
	1978	8.6	

Sources: Enno Langfeldt: Ursachen der „Schattenwirtschaft“ und ihre Konsequenzen für die Wirtschafts-, Finanz- und Gesellschaftspolitik, Kiel 1983, Table 10; Hannelore Weck, Werner W. Pommerehne, Bruno S. Frey: Schattenwirtschaft, Munich 1984, Table 7.

particular period they also need a reference period in which the underground economy was non-existent or, at most, insignificant. The most widely used indirect methods are the employment approach, the national accounts approach, the monetary approaches and the determinants approach;<sup>7</sup> Table 1 shows some of the results obtained for the Federal Republic of Germany.

### Measurement Procedures

The employment approach concludes that underground activities have increased if the observed employment rate falls behind the "normal" employment rate. The "normal" employment rate is regarded as that which would prevail if there were no underground economy. This approach has serious defects, however. For example, all changes in the employment rate are ascribed to underground activities without regard to sociological and demographic influences. Nor can it measure the underground activities of those who only work "on the side" in the underground economy without giving up their job in the "official" economy.<sup>8</sup> Estimates based on the employment approach are therefore highly unreliable.

The national accounts approach measures the size of the underground economy on the basis of differences

<sup>5</sup> Langfeldt estimates that the scale of direct need oriented activities in Germany amounts to between 37 and 50 % of "official" GNP, a ratio similar to that calculated for the USA. See Enno Langfeldt, op. cit., p. 27.

<sup>6</sup> See Hannelore Weck, Werner W. Pommerehne, Bruno S. Frey: Schattenwirtschaft, Munich 1984, p. 9.

<sup>7</sup> A detailed treatment of the individual approaches is to be found in Bruno S. Frey, Werner W. Pommerehne: Quantitative Erfassung der Schattenwirtschaft: Methoden und Ergebnisse, in: Karl-Heinrich Hausmeyer (ed.): Staatsfinanzierung im Wandel, Schriften des Vereins für Socialpolitik, Vol. 134, Berlin 1983, pp. 269 ff.; Adrian Smith: The Informal Economy, in: Lloyds Bank Review, No. 141, July 1981, pp. 45 ff.; Enno Langfeldt, op. cit., pp. 32 ff.

<sup>8</sup> See Enno Langfeldt, op. cit., p. 39.

between total expenditure and total income. Basically, GNP can be calculated in two ways: on the expenditure side in terms of spending on goods and services and on the output side in terms of the incomes created in the production process. In principle, the two calculations should produce the same result. However, if the expenditure calculation indicates a higher national product than the output calculation as is often the case with separate estimation methods, this is taken as evidence of activities in the underground economy. One point that detracts from this approach is the fact that differences between total expenditure and total income are largely due to errors in the collection and measurement of data. Moreover, the data used in the expenditure and output calculations are often not gathered independently, so that the recorded differences reflect the size of the underground economy only to a limited degree.<sup>9</sup>

The monetary approaches are based on the assumption that most payments in the underground economy are made in cash, so that the activities to which they relate should be reflected in the monetary aggregates and especially in the currency in circulation. The currency-in-circulation approach assumes that the ratio between notes and coin in circulation and the money supply is "normally" constant; any increase in the ratio would therefore signal an increase in activities in the underground economy. The main objection to this concept is that it attributes all changes in the cash ratio solely to the underground economy; it ignores changes in payment habits, such as the change-over to cashless transactions.

The currency demand approach attempts to meet this objection by explicitly taking several determinants of currency demand into consideration. The impact of each factor is then estimated by multiple regression. As a rule, income and interest rate developments and changes in the burden of taxation are taken to be determinants of cash holdings. As the tax burden is considered to be an indicator of the influence of informal activities, a direct link is assumed to exist between the growth of the underground economy and the level of the tax burden. With the help of further assumptions relating to base periods supposedly free of underground activities and the velocity of circulation of money in the underground economy, the growth and size of the underground economy can then be estimated. Table 2 shows the results calculated in this way for several countries.

<sup>9</sup> See Hannelore Weck, Werner W. Pommerehne, Bruno S. Frey: Schattenwirtschaft, op. cit., p. 13.

**Table 2**  
**Size of the Underground Economy in Selected Countries**  
(calculated by means of econometrically estimated currency demand functions)

Country	Year	Size of the underground economy as a percentage of national product
USA	1976	8-12
Canada	1976	5- 8
France	1979	6- 7
F R. Germany	1980	8-12
Sweden	1978	7-17
Norway	1978	6-16
Spain	1978	23

Source: Hannelore Weck, Werner W. Pommerehne, Bruno S. Frey: Schattenwirtschaft, Munich 1984, Table 2.

The transaction volume approach attempts to draw conclusions about the size and development of the underground economy from changes in the ratio of the volume of monetary transactions to national income. The assumption here is that the sum of all monetary transactions "normally" forms a constant ratio to national income; a rise in the ratio is taken to be an indication of an expanding underground economy.<sup>10</sup> The main difficulty with this approach lies in determining the volume of transactions empirically. Moreover, the objection that the ratio of the volume of monetary transactions to national income is not influenced solely by the activities of the underground economy applies here too.

The "determinants approach" estimates the size and development of the underground economy from the trend in important factors influencing informal activities. For this purpose, models are constructed with a series of determining factors (or indicators for these). The key problem with this approach is that the underground economy, as the variable to be explained, is unknown, so that the models cannot be tested econometrically in the usual way. Assumptions must therefore be made about the coefficients of the various determinants and their relative importance one to another; only then can figures on the development of the underground economy be derived.<sup>11</sup> Further assumptions must be made about a "pre-shadow economy" base period in order to estimate the sector's size.

Given the problems with the various methods and the fact that they each measure different aspects of the underground economy, it is not surprising that the estimates differ fairly widely. Information on the true size

<sup>10</sup> See Enno Langfeldt, op. cit., pp. 55 f.

<sup>11</sup> Cf. Hannelore Weck, Werner W. Pommerehne, Bruno S. Frey: Schattenwirtschaft, op. cit., pp. 29 f.

of the sector is sketchy at best, although a certain minimum size can be estimated. In the Federal Republic of Germany this probably works out at between 4 and 5 % of "official" GNP.

For all their differences regarding the size of the underground economy, the various approaches do give a similar picture of its development. It appears to have expanded strongly, especially from the seventies onwards, and its rate of growth has probably been well above that of the "official" economy.<sup>12</sup> The few figures available on the self-sufficiency sector indicate that the same is probably true here too. On balance, therefore, activities have been shifted from the official to the shadow economy.

### **Attractiveness of the Shadow Economy**

The switch to the shadow economy is usually based on a cost-benefit analysis in which both material and intangible factors are taken into consideration. It is therefore entirely the result of rational behaviour. There are many reasons for shifting activities from the "official" to the shadow economy. From the economist's viewpoint, the chief ones are:

- ☐ increasing restriction of private enterprise in the "official" sector through legislation and regulations;
- ☐ a growing burden of taxes and social security contributions;
- ☐ an ever more comprehensive social security safety net;
- ☐ increased leisure, either voluntarily or involuntarily as in the case of unemployment.

Other factors also play a part, such as the increase in private households' real capital, sociological factors such as self-fulfilment, responsibility for one's own actions and changes in social and moral values.<sup>13</sup>

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<sup>12</sup> See also the article in this issue by Dieter Cassel.

The state intervenes in the economic process in many ways by legislation and regulation; prescribed quality standards, environmental protection requirements and occupational safety regulations are just a few examples. Besides this, it demands unpaid "administrative services", such as the deduction of taxes and social security contributions or the provision of statistical data. Such regulations may well benefit the individual branch of activity or society as a whole, but those involved in the economic process often regard them as interference in their freedom of action. They also give rise to considerable cost, mainly because they are so comprehensive and complex, and they often constitute indirect restraints on market access; this is true of the Crafts Code in Germany and many regulations in the health sector or in the transport industry.

There are many indications that the regulatory pressure increased considerably during the seventies. During that period Germany's Federal Law Gazette<sup>14</sup> tripled in size and the number of regulations increased substantially. The rise in government expenditure from 38.6 % of GNP in 1970 to 49.5 % in 1982 might also point to an increase in administrative activity. All these factors probably created strong incentives to slip over into the shadow economy.

### **Growing Burden of Taxation**

A high and growing burden of taxation also spurs the shift from the "official" to the shadow economy. This is true of both direct and indirect taxes. At today's tax rates, just "saving" VAT on goods and services gives the underground economy a distinct price advantage. There is probably scarcely less resistance towards social security contributions, as they are a compulsory levy and their relation to public services is often not appreciated. Taxes and social security contributions increase firms' costs and reduce incomes; there is

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<sup>13</sup> Cf Dieter Cassel, Anja Caspers, op. cit., p. 2.

<sup>14</sup> In German: Bundesgesetzblatt.

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therefore a considerable temptation to switch to untaxed payments and activities.

A glance at the trend in the tax ratio is enough to show that the burden of taxation increased substantially from the seventies onwards. The GNP share of taxes and social security contributions rose from 36.5 % in 1970 to 42.3 % in 1982, mainly owing to increases in social security contributions. The trend of contribution rates for pension, health and unemployment insurance and the movement of increasingly large income groups into the progressive band of the tax scale also point to a rise in the tax burden. For that reason the spur to switch to informal activities must have greatly increased.

Certain transfer payments also create an incentive to shift activities into the shadow economy. This is particularly true of the continued payment of wages in times of illness, unemployment benefits, supplementary welfare benefits and early retirement pensions. The temptation to abuse such payments is particularly strong if it is possible to obtain a higher income by drawing state transfer payments and working in the underground economy than by being employed in the "official" economy. Hence the extension of the social security net in the seventies probably also gave impetus to the spread of informal activities.

Finally, increased leisure provides opportunities for becoming more active in the shadow economy. Shorter working hours, longer holidays and the lowering of the retirement age have created a steadily growing potential for activities "on the side", which has been further expanded by the sharp increase in unemployment since the mid-seventies. According to calculations by Langfeldt, the potential for work in the shadow economy rose from about one-eighth of the hours worked in the "official" economy in 1970 to almost 30 % at the end of the seventies.<sup>15</sup> However, the potential for working in the shadow economy tells us nothing about the actual amount of work performed or its distribution between the self-sufficiency sector and the underground economy.

### Risks of Illegal Activities

If those involved in the economic process decide to operate in the underground economy, they have to bear in mind the risk that their illegal activities will be discovered. They must also take account of the lack of legal protection or insurance. These "illegality costs" make production more expensive in the underground economy, thus tending to impede an expansion of the sector. The figure put on them will be all the higher, the more cautious are suppliers and customers, the higher

the threatened penalties and the greater the probability of detection.

However, as the danger of discovery is usually low and "moonlighting" is very difficult to prove, the threatened sanctions probably have little deterrent effect by comparison with the opportunities for profit that the underground economy offers. The risks involved in illegal activities have therefore probably not greatly impeded the forward march of the shadow economy.

### Need for Adequate Remedies

The increasing transfer of economic activities from the "official" economy to the shadow economy spawns a series of problems. For example, it reduces the significance of economic data. The "official" rate of growth understates the actual growth in total output, the rate of inflation overstates the scale of price increases and the number of "genuine" unemployed is lower than the official unemployment rate shows.<sup>16</sup> Furthermore, jobs are destroyed in the "official" economy, unemployment there rises and the state is deprived of potential taxes and social security contributions.

Viewed in this light, it does seem necessary to curb the activities of the shadow economy, particularly those of the underground economy. However, the remedy must deal with the true causes of this phenomenon. The tighter checks and more severe penalties that are so often demanded merely suppress the symptoms. It is true that they increase the risk and hence the "illegality costs", but ultimately they only bring prices in the shadow economy more closely into line with those in the "official" economy. Such a remedy is hardly likely to shift growth and jobs back into the "official" sector on an appreciable scale, for a large part of the underground activities that many could afford only because of their lower under-the-table prices would simply disappear; some would probably also be squeezed into the self-sufficiency sector. In the final analysis, this would lead to a reduction in living standards.

What is needed is therefore a remedy that suits the causes of the problem, reduces the incentives for moving into the shadow economy and increases the attractiveness of the "official" economy. Only by improving the conditions for growth in the "official" sector will it be possible permanently to check the spread of twilight activities, to encourage growth and employment in the "official" sector, garner additional revenues for the state and avoid reductions in living standards.

<sup>15</sup> Cf. Enno Langfeldt, *op. cit.*, Diagram 5.

<sup>16</sup> With regard to this set of problems, see also the article in this issue by Dieter Cassel.