

**The Shadow Economy, Its Causes and Its Consequences\***

**by**

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## **I. Introduction**

The phenomenon that goes under various names including shadow economy, black economy, underground economy and so on started attracting the attention of economists and sociologists in the second half of the 1970s. It had also attracted some attention during World War Two, especially in the United States. Clearly it had existed before even though its existence had not attracted attention. The shadow economy is often confused with the informal economy that has other roots and causes. People tend to forget that before the creation of modern economies, with strong and significant government role, economic activities were mostly informal. Therefore, informality was the norm and not the exception. Thus, it is wise to keep the informal economy and the shadow economy as two separate phenomena even though they intercept significantly.

There are various definitions of the shadow economy, some economy related and some tax related. Unfortunately the two definitions are often confused, even by experts on the subject, leading to lack of clarity as to what is being measured especially in works that aim at giving quantitative assessments of the phenomenon. This has been and continues to be a major weakness in the relevant literature.

## **II. Main Causes of Shadow Economy**

The causes that lead to the creation of a shadow economy are several but, for the most part, they can be compressed into four major categories: (1) taxes; (2) regulations; (3) prohibitions; and (4) corruption. We shall discuss briefly each of these categories, showing how it contributes to the shadow economy.

## 1. Taxes

When there were no taxes, or taxes were largely poll taxes or taxes related to ‘presumptive’ and highly visible activities, there were no shadow economic activities caused by the existence of taxes. However, as modern states developed and taxes became heavier and no longer “presumptive”, taxpayers started to attempt to avoid them by pushing some of their activities “underground” or “in the shadow”. The more successful they were in their attempts, the less tax they paid. Thus, a kind of “cold war” developed between the taxpayers, that attempted to avoid paying the taxes, and the tax administrators that had to work harder to make the taxpayers comply with their tax obligations. As tax levels and tax rates increased, the efforts of taxpayers to avoid paying taxes intensified. Some tax administration were had more success than others at preventing this migration from the official to the shadow economy. Brazilian tax administrators have been among the more successful so that tax levels have gone sharply up although their success is relative and the shadow economy is also likely to have grown.

The taxes that have been often assumed to be more connected with the shadow economy are the following: (i) income taxes; (ii) value added taxes; (iii) excises; (iv) social security taxes; (v) foreign trade taxes; and (vi) taxes on capital transfers. For these taxes, operating in the shadow created the possibility of evading paying them. Both the rates at which taxes are levied and the capacity of the tax administration to uncover these activities are important. The higher are the rates, the more likely it will be that the taxpayers will attempt to evade the taxes by engaging in non-official and unreported transactions. The beneficiaries of these attempts may be either those providing goods and

services (the sellers) or those buying them. Often both benefit. When the non payment of taxes results in lower prices to the buyers , the buyers share in the benefits from not paying the taxes. It is difficult to generalize about the incidence of the avoided tax. At times a significant, tax-free, unreported, and shadow economy will develop and coexist with the official economy. Various studies have attempted to measure the size of the shadow economy that is specifically generated by high taxes. See, inter alias, Tanzi, 1980 and 1983.

As already mentioned, the other side of the “cold war” is occupied by the tax administration. The quality of the tax administration is a significant factor, once the tax rates are set, in determining how many activities will try and succeed to operate outside of the tax net. An efficient, well-motivated, well-organized and well-funded tax administration will be able to limit the activities that migrate out of the official economy into the shadow economy. However, it will not be able to prevent all migration. A less efficient one will have more difficulty in doing so and the shadow economy will become larger. If it were possible to rank tax administrations with respect to their efficiency, one would probably find a wide range both within Latin America and within the whole world. The use of computers and of new administrative arrangements have helped tax administrations to become more efficient, but the differences among countries remain wide. The Brazilian and the Chilean tax administrations have generally been given a good score in recent years on this ground within Latin America.

Penalties for those who evade taxes and are caught also play a role. The accepted theory here is that , given the probability of being caught, the higher are the penalties imposed on tax evaders the lower will be the tax evasion. See Allingham and Sandmo,

1972; or Becker, 1968 ,for the fundamental theoretical articles on the role of penalties. However, the penalties may be on the books but may not be applied, especially when they are high; they may be applied after a long delay; or the justice system may be inefficient or even corrupt and can thus be bought by taxpayers. See Tanzi, 2000. Also the penalties may be applied selectively to political opponents of the government in power. In conclusion, even though penalties can definitely play a significant role in reducing tax evasion and the size of the shadow economy, in practice they play a lesser role than is assumed.

Another important factor that influences the ability of the tax administration in playing an efficient role is the level of exemptions used to determine whether taxpayers are required to report their incomes or sales and to pay related taxes. When exemptions levels (personal exemptions for income taxes, levels of sales that require reporting for value added taxes) are low, many taxpayers are required to register and report their incomes or sales to the tax administration. The amounts reported may be very small but will still require some attention and work on the part of the tax administration. This may distract the latter from more important tasks and increase administrative costs. On the other hand, high levels of exemptions may encourage some taxpayers to keep their activities just below the exempted level, or to claim that their incomes or sales are below that level. Some exempted level might be optimal from this administrative point of view. However, determining that level is difficult also because the optimal level is likely to change with time especially when economies grow fast or when inflation is present.

Finally there is an other important element that goes under the name of cost of compliance. Compliance costs refers to the costs to taxpayers of complying with all the

obligations (additional to the payment of the tax) that are connected with being a taxpayer. These costs involve keeping accounts, reporting information to the tax authorities, keeping informed about changing tax laws, hiring tax advisers, obtaining tax forms, filling them out, standing in line to make tax payments, and so on. These obligations may become heavy in several circumstances. They are additional to the payments of the tax. These compliance costs have been reported to be quite high in Brazil by different institutions including the IFC in the World Bank and the World Competitiveness Report. High compliance costs are likely to contribute to the development of shadow economic activities because potential taxpayers who find them burdensome try to avoid them.

In addition to the factors mentioned above, other factors could play a role in encouraging tax-induced shadow activities. These are: corrupt tax inspectors, taxpayers' morality, and the quality of public spending.

Obviously if tax inspectors are corrupt and can be bought at a price that is below the cost of paying taxes, some taxpayers will choose the cheaper option of bribing the corrupt inspectors. This requires that the corrupt inspector has a monopoly over the decision of whether the taxpayer can avoid paying taxes. This may depend on the internal policies of the tax administration. Various controls on tax administrators and other administrative policies can contain this problem but these controls are not always successful or may not exist in many countries.

Taxpayer's morality has often been mentioned in the literature as a potential factor. Some believe that because of different tax morality the taxpayers of different countries have more or less propensity to avoid paying taxes. Others dismiss this

sociological explanation arguing that most taxpayers respond more or less in similar ways to similar sets of economic incentives. Given the incentives most taxpayers would react in the same way, regardless of their nationalities.

The quality of public spending is also mentioned as an other important factor. The reasoning is that taxes are prices paid by citizens for the public services that they get from their governments. Therefore, the better are the services, the greater will be the willingness of the taxpayers to comply with their tax obligations. A country where public spending is inefficient, public officials are believed to be corrupt, and the spending is not equitably distributed, is less likely to encourage taxpayers to stay in the official economy and to satisfy fully their tax obligations. In this country the shadow economy is likely to become larger. It is difficult to determine how much of a role this factor plays in reality. But it is likely to play some role.

## 2. Regulations

Regulations are important instruments of governmental policy. Economic regulations often substitute for taxing and public spending to achieve specific governmental roles. See Tanzi, 2008. They apply to many areas connected with the economic activities of individuals and enterprises. Many regulations have major economic significance. For example there are regulations that specifically identify the certification for performing particular activities (doctors, pilots, etc.). Regulations that specify the number of hours that workers are expected to work in enterprises. Some that specify minimum wages, minimum ages, pension contributions, vacation time, etc. Some

that refers to safety conditions related to fire, health or environmental hazards and so on. Some that limit the interest rates that borrowers are expected to pay to lenders, and so on.

Obviously many of these regulations raise the cost of operating in some activities or even make it impossible or difficult to operate legally in them. As a consequence, many activities go into the shadow partly to avoid complying with these regulations and partly to avoid paying taxes. But even without the presence of taxes, some regulations would stimulate shadow activities. Countries that have too many rigid regulations – that are overregulated – tend to have larger shadow economies. See Tanzi, 1983b. Rankings of countries on the ground of the use of “red tape” or “bureaucratic constraints” has occasionally placed Brazil among the more regulated countries, thus creating stronger incentives for enterprises and individuals in Brazil to operate underground or in the shadow.

### 3. Prohibitions

Some activities are prohibited in some countries while they may be allowed in others. Prostitution is a classic example. Prohibitions are special forms of regulations so that they could also be classified together with the category of regulation. They play or can play an important role in pushing people and resources off the official economic track. There are some operation that are forbidden so that those who engage in them are engaging in illegal or even criminal activities. They do so because, often, the output of these operation are in great demand so that high profits can be made operating in them. In a private cost benefit evaluation, those who engage in them determine that the benefits in the form of potential high profits exceed the costs that include the probability of being



caught and being punished. Major forms of these activities are the production and distribution of illegal drugs, engaging in illegal gambling, lending of money at usury rates, the production and sale of dangerous or forbidden substances (weapons, prohibited biological substances, and others), various services, including prostitution, and others.

Reported estimates of the earnings in these prohibited activities are enormous. Therefore large resources, in terms of real and financial inputs, go into these activities. To them one ought to add more explicit criminal activities (robberies, murders for hire, kidnapping, extortions, etc.). There is some controversy among statisticians and other experts on whether the proceeds of these activities, or at least of some of them, ought to be counted toward the estimates of national incomes. Some argue that as long as people demand these “services” and are willing to pay for them, they ought to be counted. Others disagree. One difficulty is that some countries allow at least some of them, while others forbid them. For example Germany allows prostitution and the German tax authorities expects prostitutes to report fully their “incomes” and pay taxes on them. The Netherlands allows the sales and the consumption of some drugs that are illegal elsewhere. In both of these countries those activities are counted in the countries’ national incomes. Thus, important questions are raised by prohibition and criminal activities for the definition and the measurement of the shadow economy. Because of the large estimates of these activities, their inclusion or exclusion can make a significant difference to that measurement.

#### 4. Corruption

Another troublesome area is that of corruption. Corruption can be political or bureaucratic and can generate high incomes to those who engage in corrupt activities. It can also distort some prices as for example those of public investments when they include payments of bribes to some public officials. Once again questions can be raised on whether the proceeds from corruption should be taken into consideration in estimates of the shadow economy. In some countries these proceeds can be very large and corruption can change some of the official prices of goods sold in the market. This remains on other unsettled area.

### **III. Consequences of Shadow Economies**

Serious consequences can arise from the existence of the shadow economy. We shall list some of the main ones. The first important consequence has to do with equity. The fact that some individuals buy goods and services at prices that fully reflect the taxes imposed by the government while other individuals may buy similar but cheaper goods or services produced by the shadow economy makes the economic system less fair. All of these individuals benefit from government services. Similar considerations are relevant to those who sell the services. Those who operate in the official economy pay taxes while those who operate in the shadow economy do not.

The existence of a shadow economy and especially of a large one has implications for the market system and for competition. When enterprises that operate in the official economy, and that must comply with the full tax and regulatory obligations, compete with enterprises that operate in the shadow and that do not comply with those obligations, they inevitably face unfair competition. This unfairness rises with the increase in the tax

and the regulatory burdens in the economy. In Brazil these burdens are reported to be particularly high putting the enterprises that comply with all their legal obligations at an obvious unfair disadvantages vis a vis those that do not comply. This makes the market mechanism much less fair.

The shadow economy has implications for the tax system. When a sizeable part of the economy of a country goes into the shadow and, thus, does not meet its tax obligations, but still uses government services, it forces the government to raise the tax rates on those who pay the taxes, making their existence even more difficult. Also the government may end up with less tax revenue needed to prevent macroeconomic difficulties. By becoming less neutral the tax system imposes additional distortions on the economy. A large shadow economy may also discourage foreign direct investment into a country because FDI generally is often associated with better controlled and more taxed activities. There are some studies that have identified this effect. This may force the government to compensate the foreign enterprises for the high tax rates with more generous tax incentives. This, in turn, may create other distortions and problems.

Another important consequence of the existence of a large shadow economy is the distortion that it brings to the measurements of several important economic variables, including national income statistics, growth rates, tax burden, unemployment rate, productivity, and so on. Each of these variables may be significantly distorted if shadow activities exist and are large. By distorting the variables that determine the policies that governments pursue, shadow activities may lead to wrong policies. For example national income may be growing faster than the statistics indicate. Or the tax burden may be different from the official estimate. Or the unemployment rate may exaggerate the extent

of unemployment when many so called unemployed may in fact be working in shadow activities. Depending on the situations and on the size of the shadow economy that is not captured by the national statistical office, these distortions may encourage governments to promote policies that may not be the ones that a country needs.

Finally, and perhaps less significantly, distorted statistics may affect a country's international standing. Belonging to particular groups – G7, G20, countries entitled to foreign assistance, etc. – at times depends on official statistics. When the latter are distorted by a large shadow economy, the membership to international, exclusive clubs may also be compromised. See Tanzi, 1999.

Over recent decades there have been important policy changes that must have influenced the size of the shadow economy in different countries. For example, the decade of the 1990s saw a lot of deregulation promoted by what came to be called the Washington Consensus. Foreign trade and the financial market, but also the goods market, saw reductions in the regulations that had constrained them. This, by itself, should have reduced some of the incentives that had promoted the shadow economy. However, in several countries, including Brazil, the level of taxation and of the tax rates went significantly up creating stronger incentives to go underground or to hide in the shadow. It is not obvious which of the above factors prevailed. In Brazil, taxes went up significantly over the past two decades and some regulations may have been reduced less than in other countries. Therefore, it is possible that the incentives for the shadow economy increased. However, this is just a guess that may not be correct.

#### IV. The Measurement of the Shadow Economy

Over the past three decades, since the shadow economy started to attract the attention of economists, sociologists, and statisticians, many attempts have been made by economists and statisticians to measure its size in various countries. Several of the early attempts, using different methods, were reported in the first book on the topic published in 1982. See Tanzi, 1982. Those early attempts have been refined in later studies but they have not substantially changed. An approach that has become particularly popular is the so-called **currency demand approach** first explained and applied to the measurement of the shadow economy of the United States. See Tanzi, 1980 and 1983.

The “currency demand approach” was based on the assumption that underground, or shadow, economic activities are likely to use cash to finance transactions because payments made in cash cannot be traced while payments made by check, at least in the United States, are more easily traceable. Thus, if one could estimate how much cash was being held specifically for transactions within the shadow economy, and assuming that the velocity of use of that cash is the same as that for the official economy, this estimate could provide an indirect measure of the shadow economy. A **currency demand equation** was developed, using several independent variables, and was applied to United States data. This equation made it possible to estimate the demand for cash linked to attempts to evade paying US income taxes. It was specifically a tax -related method developed exclusively for the U.S. economy. Over the following three decades, various authors have modified the basic equation by adding new variables and have applied it to the estimation of shadow economies in different countries, including Brazil. It was never

clear to me whether this was a legitimate extension of the original approach. There are, however, a few comments worth making in connection with these measurements.

The first comment is that, because the factors that lead to the existence of a shadow economy, the shadow economy can exist even without any tax evasion although tax evasion and shadow economy often go together. Thus my original method was too restrictive. By the same token, tax evasion can exist even in the absence of a shadow economy. For example, when one exaggerates deductions in the payment of the income tax or when one does not declare income earned. This means that estimates of tax evasion can be different from estimates of the shadow economy linked to tax evasion. And tax related estimations of the underground economy can be different from those linked to other determining factors. Or, putting it differently, estimates of the shadow economy that are strictly tax related may be very different from those that are not tax related.

Many observers assume incorrectly that the national accounts authorities (the statistical offices) depend on information obtained from the tax authorities for their estimation of national income statistics. Therefore, they assume that tax evasion leads directly to underestimation of national income so that the estimation of the shadow economy implies that the national income is underestimated. In reality, most of the national income statistics are not derived from tax information. For example, much of the information on the output of the agricultural sector is obtained through direct estimation of observed output that is combined with the prices of commodities estimated to be produced to determine the value of agricultural production. Thus, the estimation of that output can be wrong but not because of the existence of the shadow economy. This

means that there may be little relation between estimations of the shadow economy and estimation of national income or gross national product.

An estimated shadow economy of, say, 40 percent does not imply that the GDP has been underestimated by 40 percent or that the country is in fact 40 percent richer than estimated. It would be nice to conclude that Brazil is 40 percent richer than estimated and that its tax burden is substantially lower than calculated from official statistics because the gross domestic product that should be used in calculating its tax burden would be 40 percent larger thus dramatically reducing the tax burden.

#### **V. Concluding Remarks**

The shadow economy is a phenomenon of great importance. Because of this it deserves a lot of attention and study. It is especially important for the implications that it has for the competitiveness of enterprises and for the equity and efficiency of the market economy. It is also important for determining the fairness of the tax system. However, estimations of its size must be interpreted very carefully. There is a lot of confusion as to what exactly is being measured and what the measures imply. For sure they should not be used to determine the size of the economy of a country such as Brazil.

## References

- Allingham, M. G. and A. Sandmo, 1972, "Income Tax Evasion: A Theoretical Analysis", Journal of Public Economics, 1972, 1 (314) (November), 323-38.
- Becker, Gary 1968, "Crime and Punishment: An Economic Approach", Journal of Political Economy, 1968, 76, 169-217.
- Vito Tanzi, 1980, "The Underground Economy in the United States: Estimates and Implications", Banca Nazionale del Lavoro Quarterly Review, No. 135, December.
- \_\_\_\_\_, 1981, "A Second (and More Skeptical) Look at the Underground Economy in the United States," Paper presented at Wertheim's Conference on the Underground Economy (New York, June 24, 1981).
- \_\_\_\_\_, editor, 1982, The Underground Economy in the United States and Abroad (Lexington Books).
- \_\_\_\_\_, 1983, "The Underground Economy in the United States: Annual Estimates, 1930-80", in IMF Staff Papers, Vol. 30, No. 2 (June 1983).
- \_\_\_\_\_, 1983b, "The Underground Economy: Causes and Consequences of this Global Phenomenon", in Finance & Development, December 1983, Vol. 20, No. 4.
- \_\_\_\_\_, 1999, "Uses and Abuses of Estimates of the Underground Economy", The Economic Journal, Vol. 109, No. 456, June 1999.
- \_\_\_\_\_, 2000, "The Underground Economy and the Unemployment Rate", Chapter 12 of Vito Tanzi, Policies, Institutions and the Dark Side of Economics, (Elgar: 2000).