# Shadow Economies around the World: Model Based Estimates[*]

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**Abstract**

In this paper, relying on a two-sector dynamic general equilibrium model, we propose and then use a new methodology to construct a novel shadow economy dataset. We calibrate our model to match various reported macroeconomic variables and then back out the size of the shadow economy from the calibrated model. This allows us to construct an unbalanced 161-country panel dataset over the period 1950 and 2009. This aims to be the largest dataset in the literature, particularly with its time-series dimension. We also present certain features of the data along with various descriptive statistics.

*JEL codes:*. E26, H26, O17, O41.

*Keywords:* shadow economy; informal sector; two-sector dynamic general equilibrium models; panel data.

# 1 Introduction

Shadow economy, sometimes also titled informal, hidden, black, parallel, second or underground economy (or sector) is defined by Hart (2008) as a set of economic activities that takes place outside the framework of bureaucratic public and private sector establishments. Another paper by Ihrig and Moe (2004) defines it as a sector which produces legal goods, but does not comply with government regulations. Additionally, Frey and Pommerehne (1984), Loayza (1996), Johnson, Kaufmann and Shleifer (1997), Johnson, Kaufmann and Zoido-Lobaton (1998a, 1998b), Thomas (1999), Fleming, Roman and Farrell (2000) Schneider and Enste (2000, 2002), Dell'Anno and Schneider (2004), Schneider (2005) provide or use similar definitions and descriptions among many others.

Even though informality is a widespread phenomenon and poses serious social, economic, cultural and political challenges across the world, many issues about its nature and consequences still remain largely under-explored or unresolved. For example, the evidence presented in the existing literature, has failed to generate a consensus around the measurement of the informal sector among researchers. There are also many other open questions regarding the determinants and/or effects of informality including even such basic ones such as whether informal sector size would be larger in low income or high income nations (see Dreher and Schneider, 2010); whether taxes are positively correlated with informal sector size or not (See Schneider and Enste, 2000, Friedman et. al. 2000, Elgin, 2010 among many others.) or whether shadow economy and corruption are substitutes or complements (Dreher and Schneider, 2010).

Still, there is a significant amount of empirical research that looks into the causes and effects of the shadow economy. The existing studies typically consider variables like income per capita (or worker), unemployment, tax burden, government spending, regulatory costs, openness to international trade, and various other institutional and cultural characteristics as possible determinants of the shadow economy (see Johnson et. al 1997, 1998; Friedman et al. 2000; Torgler and Schneider, 2007; Elgin, 2010 and much more recently Elgin and Solis-Garcia, 2011 among many others.) Frequently used institutional factors include corruption levels, quality of the bureaucratic establishment, law and order enforced by the government. Common cultural and social factors, included in empirical studies are tax morale, religious factors, trust, ethnic unity or polarization. Surely, whether certain factors affect informal sector size or

not depends on the group of countries and periods being made subjected to empirical analysis.

There are also many studies in the existing literature that explore effects of the shadow economy. By these studies, presence of the shadow economy affects both the level and the cyclicality of fiscal policy (Cicek and Elgin, 2011); provision of social security, labor force participation behavior (Schneider and Enste, 2000); income distribution (Hatipoglu and Ozbek, 2011); magnitude of business cycles (Elgin, 2012); monetary base (Tanzi,1983) and total factor productivity.(D'Erasmo and Moscoso Boedo, 2012)

As the number of papers in the growing literature on informality indicates, there is an increasing attention on the economic analysis of the shadow economy. However, one particular setback which, despite the development of various methods, still persists in the literature is the lack of significantly large datasets that would make informality subject to robust (applied) policy analysis. Even though, there are various methodologies suggested for its measurement, this issue mostly arises due to the fact that the size of the shadow economy, by definition, is hard to measure and make it subject to empirical analysis. Most of the suggested methodologies (See the next section for a longer review.) are usually used for a particular country or even a region and could not be generalized to cross-country panel frameworks. One particular exception is the dataset presented by Schneider, Buehn and Montenegro (2010) which reports shadow economy size (as % of GDP) for 162 countries in an annual basis for the 9 years between 1999 and 2007. In this study, the authors rely on the MIMIC (Multiple Indicators and Multiple Causes) approach to estimate the size of the shadow economy, which according the Breusch (2005) is largely unfit for the purpose.

In this paper, contributing to this literature, we aim to address two issues: First, using a two-sector dynamic general equilibrium we present a new approach to estimate the size of the shadow economy. We believe that this approach has various advantages over the existing methodologies. Second, we use this new methodology to construct a new unbalanced 161-country panel dataset over the period 1950 and 2009. This aims to be the largest dataset in the literature, particularly with its time-series dimension. Among many possible advantages regarding its use, the construction of such a dataset would allow for various policy analysis that require a significantly large time dimension.

The rest of the paper is organized as follows: In the next section, we provide a short review of the existing methodologies used to estimate the size of the shadow economy economy. Then in the third section, we describe a new

methodology to construct shadow economy estimates. Next, in section four, we apply this methodology to obtain shadow economy size estimates in a panel of 161 countries. In section five, we make some robustness checks to establish robustness of our estimates. Finally, in the last section we provide concluding remarks.

# 2 Estimating the Size of the Shadow Economy

## 2.1 Existing Methodologies

As mentioned above, by its definition estimating the size of the shadow economy is difficult and daunting. Nevertheless, various approaches and methodologies have been suggested and to some extent used in the literature to come up with estimates. Schneider (2005) and more recently Orsi, Raggi and Turino (2012) provide an excellent survey and comparison of different ways of estimating the shadow economy size. We critically review these below, however we refer the reader to these two papers for a longer survey of these approaches.

Schneider (2005) classifies shadow economy estimation methods under three categories. They differ in various dimensions but they are all based on the use several different econometric estimation methods. These are direct approaches, indirect approaches and the MIMIC approach, respectively.

### 2.1.1 Direct Approaches

Direct approaches are generally based on the use of surveys, questionnaires, interviews and tax auditions of firms and/or households, the results of which are then used to constructs estimates of shadow economy size employing microeconomic or microeconometric methods. (See Schneider, 2005 for a list of papers using these approaches.) Difficulties regarding the sample choice, possible existence of a selection bias, measurement errors regarding interviews and surveys are among the disadvantages of these approaches. Moreover, these approaches are mostly used at some specific point in time and it is usually very difficult to create a time dimension and therefore a time-varying estimate of the shadow economy size.

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### 2.1.2 Indirect Approaches

Methods under this category usually try to obtain estimates exploiting various different macroeconomic relationships under certain assumptions. Estimates can be obtained for example from differences between i) national income and expenditures, ii) official and actual labor force participation, iii) transactions and national income, iv) electricity consumption and GDP. Yet another heavily used method is the currency demand approach which is based on the use of a currency demand function to estimate the size of the shadow economy.[1]

These methods are generally criticized for being based on various simplifying and limiting assumptions. Moreover, they generally focus on one specific aspect or indicator of the shadow economy and neglect many others. (See Schneider, 2005 for a more extensive review and critic of these approaches.)

### 2.1.3 MIMIC Approach

This approach builds upon the works of Frey and Weck-Hannemann (1983) and is essentially based on the use of a specific structural equation model, titled the MIMIC approach.[2] This approach treats the size of the shadow economy as an unobserved latent variable and essentially consists of two steps: In the first step, one determines the causes and the indicators of the shadow economy. Then in the second step, given the causes and the indicators and the specified relationship among them through the unobserved latent variable, one runs a structural equation model to estimate the coefficients of the causes and the indicators. However, similar to the methods outlined above, this approach is based on the use of ad-hoc econometric specifications thereby making it subject to statistical errors. Moreover, another shortcoming of this approach is that it does not rely on any micro-foundations. Breusch (2005) is one of the heavy critics of using the MIMIC approach for this purpose.

## 2.2 Towards A New Approach

Currently used approaches aiming to estimate the size of the shadow economy might be criticized from three different points of view. First, all these methods are based ad-hoc econometric specifications and assumptions. Second, heavy

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[1]See Feige (1979), Tanzi (1983), Kaufman and Kaliberda (1996), Johnson Kaufman and Zoido-Lobaton (1998a) Thomas (1999) for different applications and comparison of these different methods.

[2]There is also a dynamic version of the MIMIC model which does not differ from the static model in an essential way.

use of econometric estimations make them prone to measurement errors. Finally, even though they specify various macroeconomic variables in their econometric specifications, they don't have any microeconomic foundations which makes them open to the Lucas Critique. (See Lucas, 1976.)

To overcome these shortcomings, in this paper we propose and then use a new methodology to estimate size of the shadow economy. We present and describe this in the next section.

# 3 Constructing a New Shadow Economy Dataset

## 3.1 Procedure

As shortly outlined above the main motivation in constructing a new methodology is to form a new approach which relies on microfoundations and which is not based on ad-hoc econometric specifications and assumptions. To this end, we will rely on a two-sector (official and the shadow economies) dynamic general equilibrium model. In what follows, we will first solve this model and characterize it in the steady state. Then we will calibrate the model's key parameters to match various observables in the data and finally we'll use the model to back out the unobservable size of the shadow economy. As the observables we plug in to the model vary over time for every country, we will have both time-series and cross-sectional variation in the size of the shadow economy.

## 3.2 Methodology

We will rely on a simple deterministic dynamic general equilibrium model[3] which is mostly adapted from Roca, Moreno and Sanchez (2001), Ihrig and Moe (2004), and Busato and Chiarini (2004).

In our model environment, there is an infinitely-lived representative household endowed with $K_0$ units of productive capital and a total of $H_t > 0$ units of time. The household has access to two productive technologies, denoted *formal* and *shadow*, and maximizes its lifetime utility by solving the the following

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[3]Since we want to run the model for as many countries as possible, as opposed to Busato and Chiarini (2004) or Orsi, Raggi and Turino (2012), we do not introduce uncertainty, as this would require more observables to calibrate the model.

program:

$$\max_{\{C_t, X_t, N_{St}, N_{Ft}\}_{t=0}^{\infty}} \sum_{t=0}^{\infty} \beta^t U(C_t)$$

$$\text{s.t.} \quad C_t + X_t = (1 - \tau_t)\theta_{F_t} K_t^{\alpha} N_{Ft}^{1-\alpha} + \theta_{S_t} N_{St}^{\gamma} \quad (1)$$

$$K_{t+1} = X_t + (1 - \delta)K_t \quad (2)$$

$$N_{S_t} + N_{F_t} = H_t. \quad (3)$$

In the program above, $\beta < 1$ is a discount factor. We assume that the instantaneous utility function $U(\cdot)$ is strictly increasing and strictly concave. Equation (1) is the household's resource feasibility constraint: The amount of consumption $C_t$ and investment $X_t$ should equal the amount produced using the formal and informal technologies.

The right-hand side of equation (1) shows that the formal technology follows a standard Cobb-Douglas specification, where $\theta_{F_t}$ is the level of productivity exclusive to the formal sector, $K_t$ is the household's capital stock, and $N_{Ft}$ is the amount of hours the household devotes to the formal technology. In addition, formal output gets taxed at a rate $\tau_t \in [0, 1]$.

The shadow economy technology depends on labor input only and has form $\theta_{S_t} N_{St}^{\gamma}$, where $\theta_{F_t}$ is the level of productivity exclusive to the informal technology and $N_{St}$ is the amount of time that the household devotes to the informal technology. At a cost of zero, the household can attempt to hide the income received from the informal technology. The government cannot enforce payment of taxes on informal output.

The rest of the household's problem is standard: Equation (2) is the household's law of motion for capital, where $\delta \in [0, 1]$ is a depreciation rate. Equation (3) is the household's time constraint.

In this simple model, we assume that the government's policy $\tau_t$ is exogenously determined and the tax revenue is used to finance an exogenous stream of government spending $G_t$. An equilibrium is easy to define:

**Definition 1.** Given the government policy variable tax burden $\{\tau\}$, a competitive equilibrium of the two-sector model is a set of sequences $\{C_t, X_t, K_{t+1}, N_{St}, N_{Ft}, G_t\}_{t=0}^{\infty}$ such that

1. The household's problem is solved by $\{C_t, X_t, K_{t+1}, N_{St}, N_{Ft}\}_{t=0}^{\infty}$.

2. $G_t$ equals $\tau_t \theta_{F_t} K_t^{\alpha} N_{Ft}^{1-\alpha}$.

## 3.3 Solving the model

Assuming logarithmic utility of consumption, household's maximization problem yields the following first order conditions:

$$\frac{C_{t+1}}{C_t} = \beta[(1 - \tau_t)\alpha\frac{Y_{F_{t+1}}}{K_{t+1}} + 1 - \delta] \tag{4}$$

,where $Y_{F_t} = \theta_{F_t}K_t^\alpha N_{Ft}^{1-\alpha}$ and

$$\theta_{S_t}\gamma N_{St}^{\gamma-1} = (1 - \tau_t)\theta_{F_t}(1 - \alpha)K_t^\alpha N_{Ft}^{-\alpha}. \tag{5}$$

By rearranging the Euler equation (4), one can obtain $K_t$ in terms of $N_{Ft}$:

$$K_t = N_{F_t}\left[\frac{(1 - \tau_t)\theta_{F_t}\alpha}{(1 + g_c)/\beta - 1 + \delta}\right]^{\frac{1}{1-\alpha}}. \tag{6}$$

where $g_c$ is the growth rate of consumption in period $t$, i.e. $1 + g_c = \frac{C_t}{C_{t-1}}$
Moreover, informal labor can be obtained now using (5) as follows:

$$N_{S_t} = \left\{\frac{\gamma\theta_{S_t}}{(1 - \tau)(1 - \alpha)\theta_{F_t}}\left[\frac{(1 + g_c)/\beta - 1 + \delta}{\alpha(1 - \tau_t)\theta_{F_t}}\right]^{\frac{\alpha}{1-\alpha}}\right\}^{\frac{1}{1-\gamma}} \tag{7}$$

Given the characterization of the model, we now can turn to the calibration and how we back out the size of the shadow economy using the model.

## 3.4 Calibration and Data Construction

Our ultimate purpose in this section is to back out time-varying estimates of the size of the shadow economy as % of official GDP in every country for any year $t$. In our model's terms, that is given by $\frac{\theta_{S_t}N_{S_t}^\gamma}{\theta_{F_t}K_t^\alpha N_{Ft}^{1-\alpha}}$.

To back out the shadow economy size in a specific country for a specific year $t$ we proceed as follows:

First, as standard in the real business cycle literature we assume that $\alpha = 0.36$, $\delta = 0.08$. Moreover, we take $\gamma = 0.425$ following Ihrig and Moe (2004). Next, we construct the capital stock series $\{K_t\}$ relying on the widely used

perpetual inventory method.[4]

Once the capital stock series is constructed we can calibrate $\beta$ for every country using the Euler equation (4). Here we obtain the aggregate consumption data $C_t$ from PWT.

Moreover, we obtain (formal) employment $(N_{F_t})$ from PWT as well. Finally, as we assume a balanced budget for the government $\tau_t$ is obtained as the share of government spending in GDP similarly from the same source.

Next, using the specified values for $\alpha$ and $\delta$, the calibrated value of $\beta$ and year specific $\tau_t$, $N_{F_t}$ and $K_t$, we use the equation (6) to back out $\theta_{F_t}$ for any year $t$.

Now, the only thing remains to be calculated is $\theta_{S_t}$. Here we assume that $\theta_{S_t}$ grows at a rate which is the average of the growth rate of $K_t$ and $\theta_{F_t}$.[5] Having made this assumption regarding the growth rate of $\theta_{S_t}$, we choose $\theta_{S_{2007}}$ to match the shadow economy size in 2007 of the series reported in Schneider et. al. (2010) and construct the rest of the $\theta_{S_t}$ series using the calculated growth rates.

Finally, we calculate $N_{S_t}$ using (7). Once $N_{S_t}$ is obtained, the size of the shadow economy in a specific year can easily be computed using $\frac{\theta_{S_t} N_{S_t}^{\gamma}}{\theta_{F_t} K^{\alpha} N_{F_t}^{1-\alpha}}$ for every year.

# 4    Results

Our procedure allows us to have a dataset with 7395 observations for 161 countries[6] in an unbalanced panel framework running from 1950 to 2009. The com-

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[4]We obtain the capital-stock using the following formulae:

$$K_{t+1} = K_t(1 - \delta) + I_t$$
$$\frac{K_{1950}}{Y_{1950}} = \frac{\sum_{i=1950}^{2009} \frac{I_i}{Y_i}}{\delta + g_Y}$$

The first equation is the standard law of motion for capital, where $K_t$ stands for the aggregate capital stock in year $t$, $\delta$ for the depreciation rate of physical capital, and $I_t$ for the amount of investment in year $t$. Here we set $\delta = 0.08$ and obtain the data on investment from Penn World Tables 7.0 (PWT). The second equation is based on the assumption that the economy is at the steady state in the initial period of analysis which we take as 1950 here. Once the capital stock in 1950 is calculated using the second equation, the first equation allows us to create a capital stock series for the years between 1950 and 2009.

[5]Notice that the shadow economy production function is only a function of the productivity parameter $\theta_S$ and labor $N_S$. This does not necessarily mean that the shadow economy doesn't employ capital in production as one can interpret the function so that a fixed amount of capital is incorporated in $\theta_{S_t}$. Therefore, the assumption we make regarding the growth of $\theta_{S_t}$ is not unrealistic.

[6]The country list is provided in the appendix. The only country we exclude from Schneider, Buehn and Montenegro (2010) is Myanmar.

**Table 1: Unweighted Shadow Economy Size**

| Region | Mean | Median | Minimum | Maximum | Std. Dev. |
|---|---|---|---|---|---|
| OECD-EU | 23.53 | 21.06 | 8.07 | 72.08 | 11.34 |
| Latin | 45.47 | 44.33 | 22.64 | 74.30 | 12.79 |
| Post-Socialist | 34.94 | 33.95 | 14.15 | 80.33 | 12.08 |
| MENA | 29.01 | 27.80 | 15.09 | 63.12 | 11.36 |
| Sub-saharan | 43.92 | 41.70 | 21.85 | 78.41 | 10.48 |
| Asia | 38.40 | 37.65 | 10.65 | 78.09 | 14.76 |
| World | 36.54 | 35.91 | 8.07 | 80.33 | 14.78 |

plete dataset is reported in a country by country and year by year basis in the appendix. Nevertheless, we report various descriptive statistics and present illustrative figures in this section.

**Table 2: GDP-weighted Shadow Economy Size**

| Region | Mean | Median | Minimum | Maximum | Std. Dev. |
|---|---|---|---|---|---|
| OECD-EU | 20.38 | 19.65 | 16.02 | 25.66 | 2.99 |
| Latin | 43.27 | 40.56 | 35.19 | 56.78 | 5.75 |
| Post-Socialist | 35.64 | 32.28 | 26.20 | 55.67 | 8.58 |
| MENA | 28.89 | 23.65 | 19.30 | 60.89 | 10.29 |
| Sub-saharan | 42.94 | 41.62 | 34.10 | 51.97 | 4.69 |
| Asia | 38.47 | 37.24 | 20.82 | 65.56 | 13.32 |
| World | 27.88 | 28.14 | 21.59 | 36.09 | 3.91 |

The first thing we notice is that the 1999-2007 part of our dataset has a correlation of 0.987 with the shadow economy data reported by Schneider, Buehn and Montenegro (2010).

Next, in order to observe the variation of the shadow economy size in different group of countries over time, we divided the world into 6 different groups. These are OECD-EU, Latin American and Caribbean, Post-Socialist (Transition), Middle East and North African, Sub-Saharan African and Asia-Oceania countries.[7] We also report descriptive statistics for the whole dataset (denoted by the row titled World) as well.

In Table 1, we report the descriptive statistics of the shadow economy size in these 6 different groups of countries. These group statistics in Table 1 are unweighted, that is we simply treated every country in a specific group equal.

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[7]See the Appendix for the countries included in specific groups.

These are group statistics for the 1950-2009 period, except for Post-Socialist countries in which case the period covered is 1990-2009.

Table 3: Regional Trends (GDP-Weighted Data)

| Region | 1960-1970 | 1971-1980 | 1981-1990 | 1991-2000 | 2001-2009 |
|---|---|---|---|---|---|
| OECD-EU | 22.92 | 20.26 | 18.92 | 17.81 | 16.53 |
| Latin | 47.43 | 41.88 | 40.02 | 39.09 | 36.28 |
| Post-Socialist | - | - | - | 31.56 | 31.55 |
| MENA | 33.77 | 24.58 | 22.89 | 22.35 | 21.06 |
| Sub-saharan | 50.36 | 44.58 | 40.40 | 39.81 | 36.16 |
| Asia | 42.92 | 37.63 | 33.08 | 26.16 | 26.45 |
| World | 31.51 | 28.571 | 25.70 | 23.99 | 23.95 |
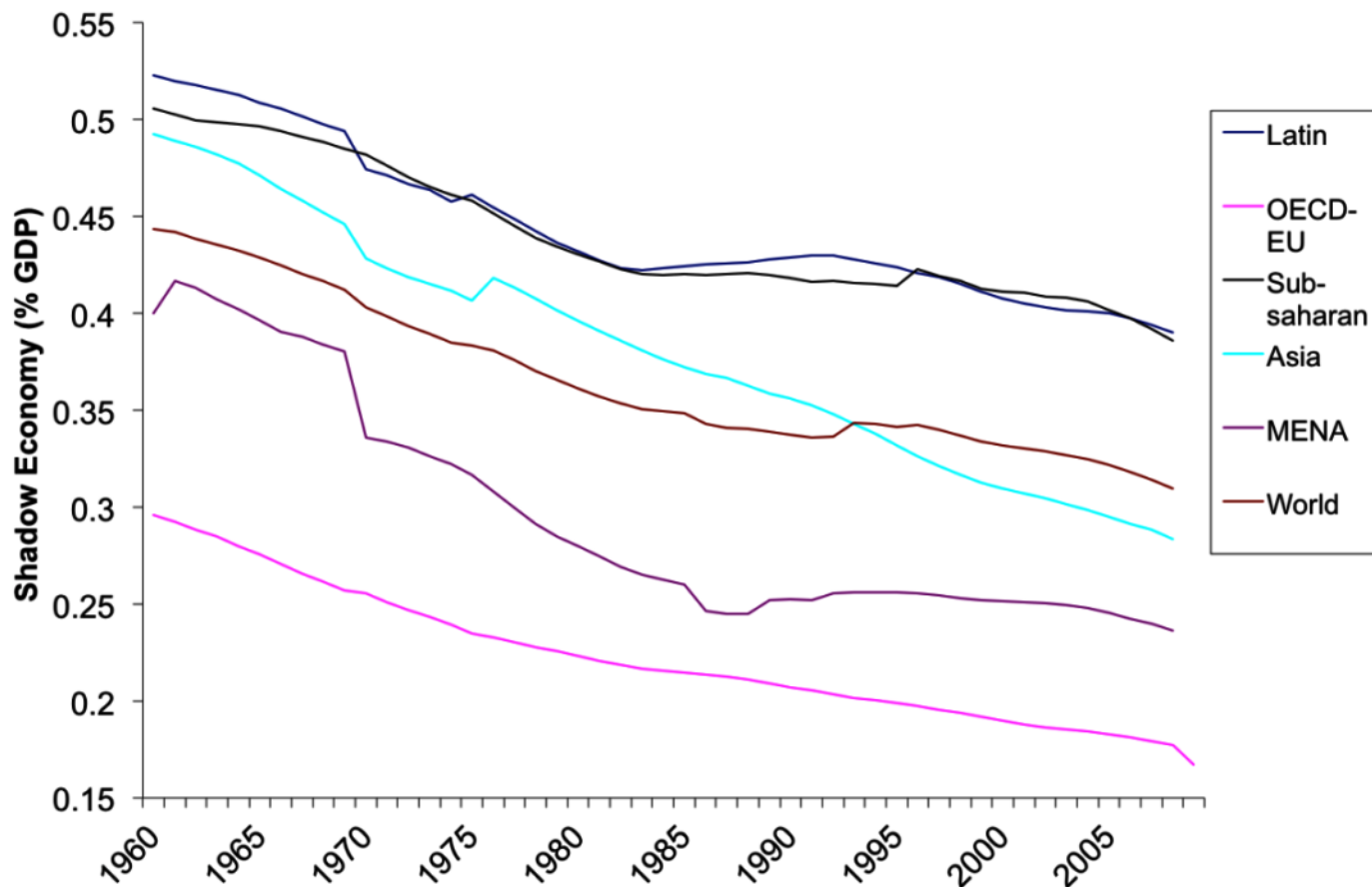


Figure 1: Shadow Economy Over Time: Unweighted Regional Averages

As looking at unweighted series might be a misleading way of calculating the shadow economy size in a group, in Table 2 we report the descriptive statistics

of weighted series in different groups of countries.[8] Investigating Tables 1 and 2 indicate a couple of crucial points: First, as ceteris paribus, richer countries tend to have a smaller shadow economy (tough the relationship is not totally linear) once we weight the shadow economy size with GDP, the world average is significantly reduced. Second, judging from the standard deviations, the size of the shadow economy experienced a significant variation both across groups and within groups. Third, Latin American and Sub-saharan economies do have significantly larger shadow economies than the other group of countries where the OECD-EU group does have a significantly smaller shadow economy size. Post-socialist transition economies also have a significant shadow economy size.
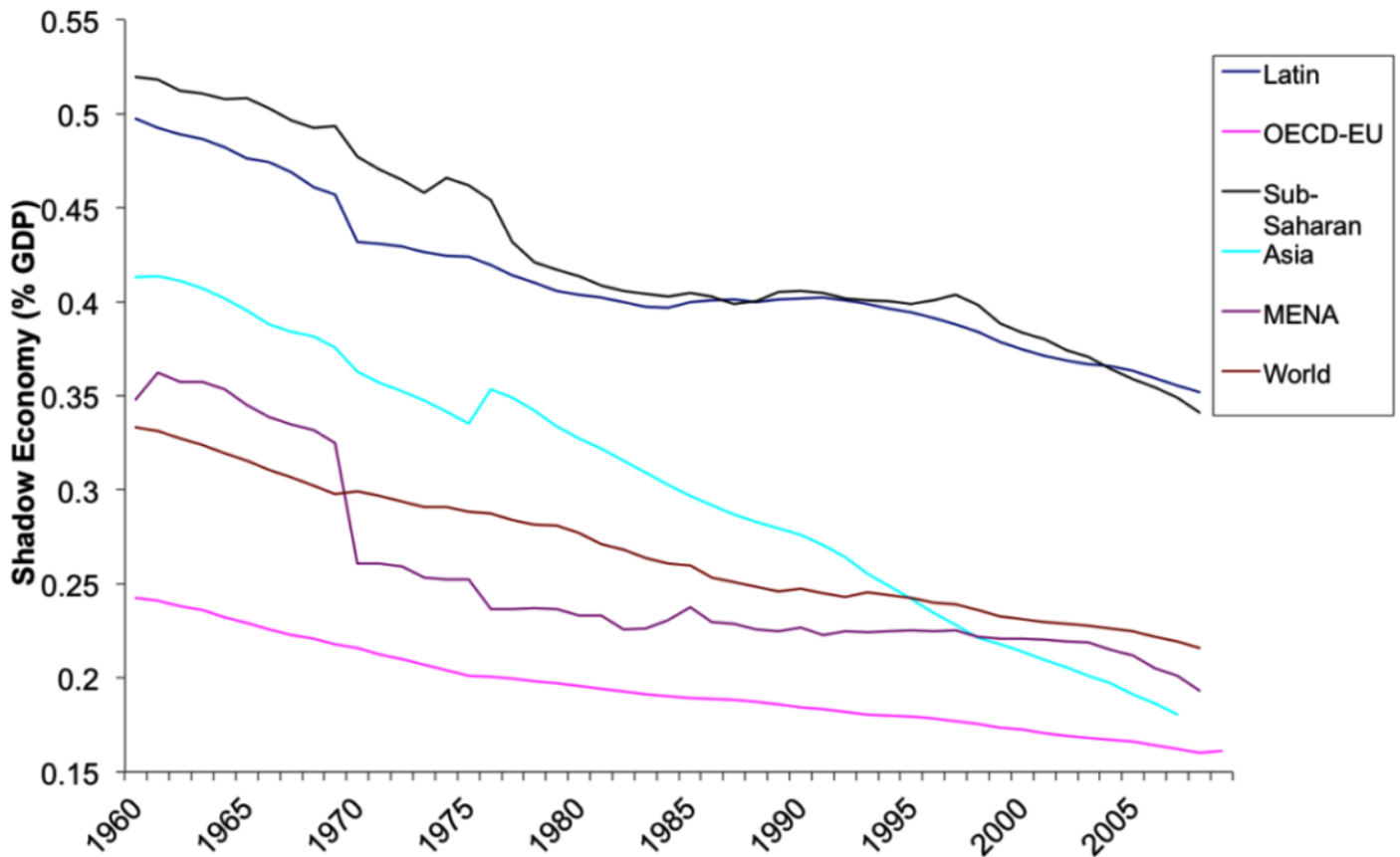


Figure 2: Shadow Economy Over Time: GDP-weighted Regional Averages

Next, in Table 3, we report the evolution of the shadow economy size in different groups over time in approximately 10-year intervals. In line with Table

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[8]We calculated the weighted series for a group using the following formula: $\frac{\sum_{i=1}^{N} S_i Y_i}{\sum_{i=1}^{N} Y_i}$, where $S_i$ is the size of the shadow economy (as % GDP) $Y_i$ is the GDP in the country i, and N is the number of countries in the group.

3, Figures 1 and 2 present unweighted and GDP-weighted shadow economy size in an annual basis. For almost all country groups (except for the Post-Socialist one) we observe a declining trend over time. However, the pace of the reduction seems to loose some momentum in the last decade. Also, somewhat more interestingly we observe a spike starting in 2007 for the OECD-EU group. Considering the emergence of the global economic crisis especially shaking the developed economies, this could give further support for the hypothesis that the size of the shadow economy is countercyclical as suggested by Roca, Moreno and Sanchez (2001) and Elgin (2012).
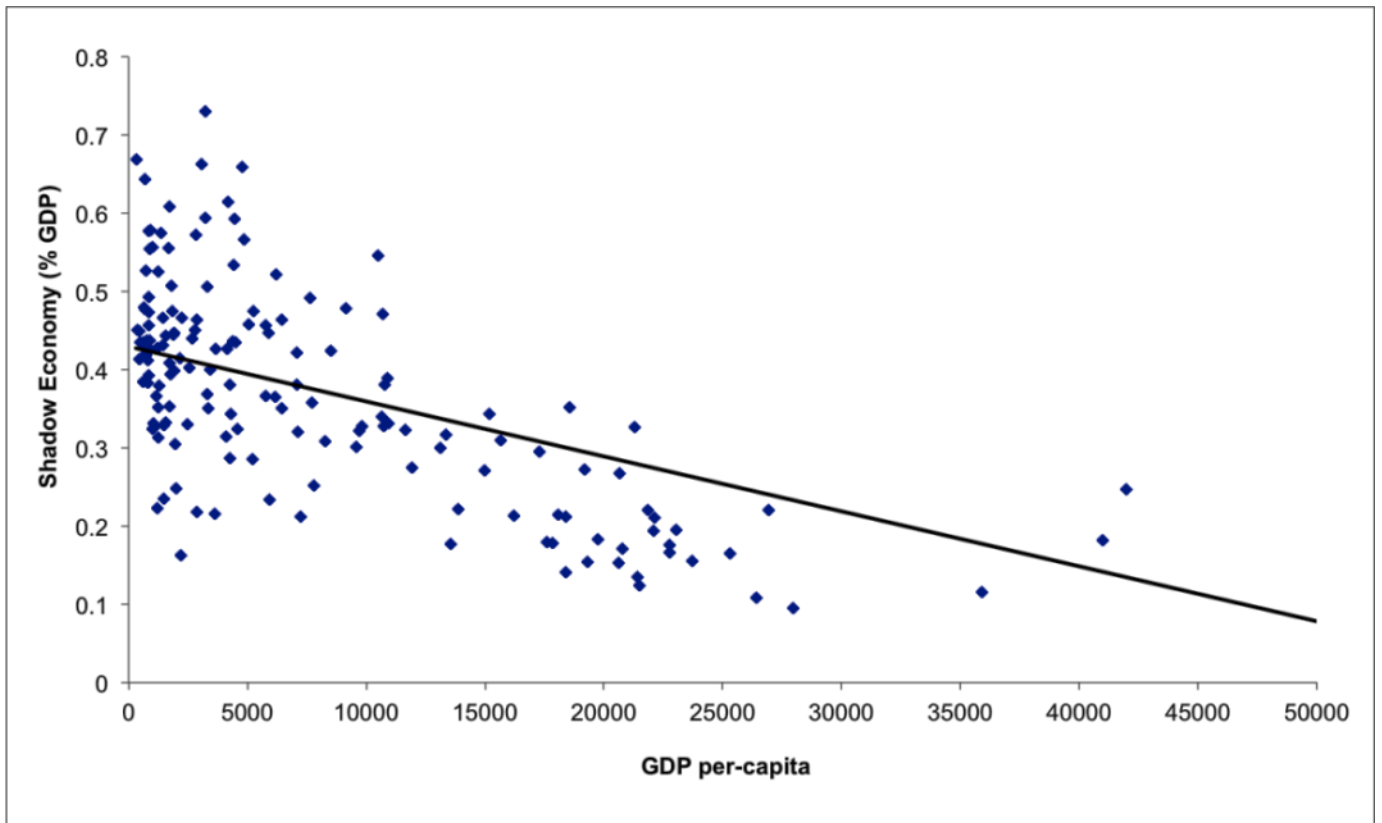


Figure 3: Shadow Economy in a Cross-Section

As mentioned above, richer countries tend to have a smaller shadow economy size. We illustrate this in Figure 3, where we plot shadow economy size as % of GDP vs. GDP per-capita. Here we plot average values for every country from 1950 to 2009.

Even though Figure 3 suggest the existence of a highly negative (and linear) relationship between GDP per-capita and shadow economy size in a cross-section, there is also evidence leading us to suspect that this relationship might
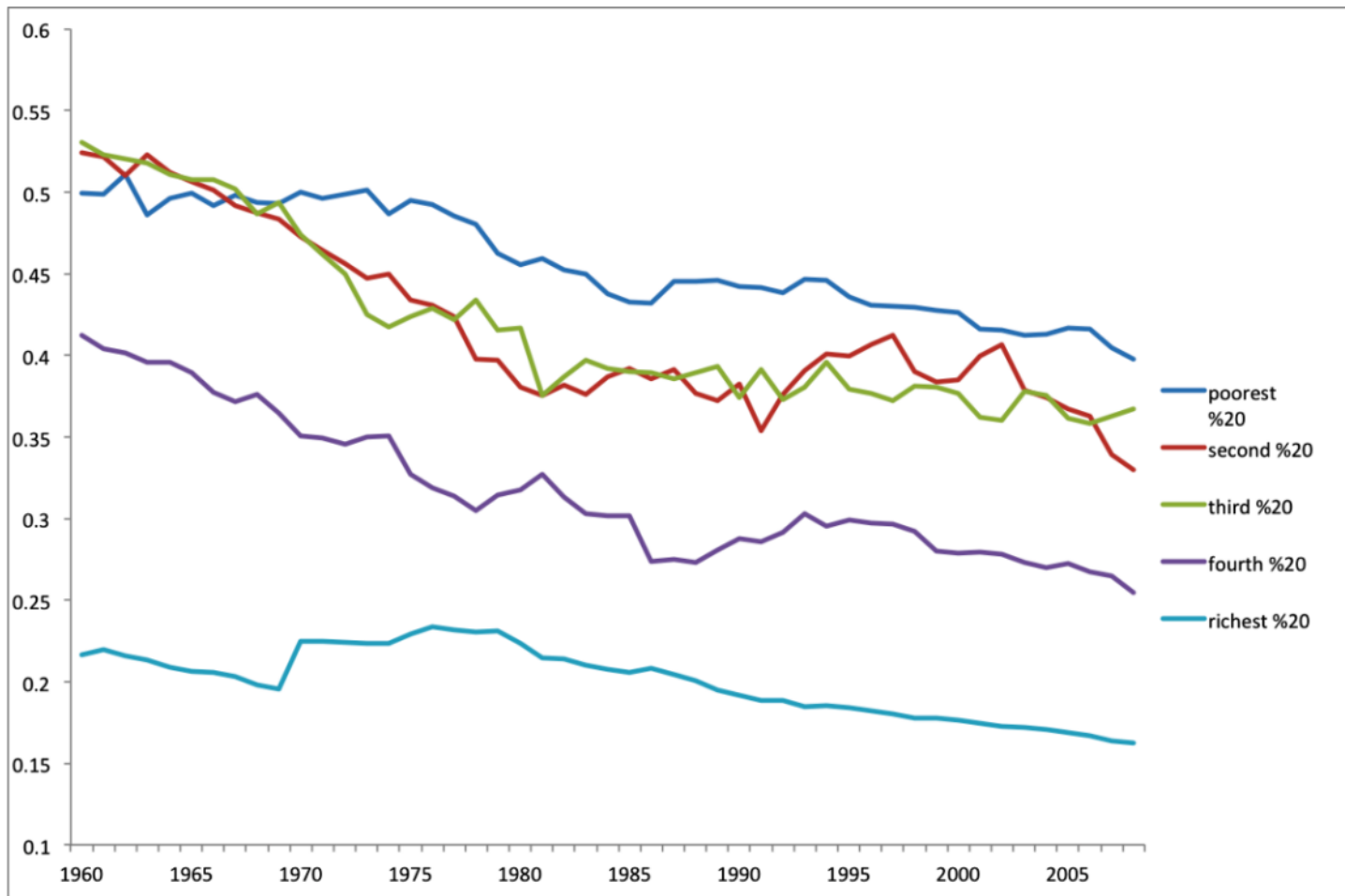
Figure 4: Evolution of the Shadow Economy in Different Income Groups

be non-linear. In Figure 4, we aim illustrate this. Here, we group countries with respect to the GDP per-capita and then report the average GDP-weighted shadow economy size in each group for every year from 1960 to 2009. To do this, we divide the countries into five categories: poorest, second, third, fourth and the richest 20 %. Not surprisingly, richer countries tend to have a smaller shadow economy; however what Figure 3 shows that this relationship might not be exactly linear, especially in the process of development. Even tough, further research is required on this, this might be considered as a support for informality dimension of the Kuznets Curve hypothesis.

# 5 Robustness Checks

In this section we present several robustness checks of the methodology we propose to construct shadow economy estimates.

## 5.1 Tax Burden vs. Government Spending

Table 4: Tax Burden vs. Government Spending: 1960-2009

| With Taxes | Region | Mean | Median | Minimum | Maximum | Std. Dev. |
|---|---|---|---|---|---|---|
| | OECD-EU | 22.80 | 21.02 | 8.76 | 72.11 | 10.47 |
| | Latin | 45.07 | 43.01 | 22.65 | 72.14 | 12.63 |
| | Asia | 38.10 | 36.97 | 10.69 | 79.12 | 14.03 |
| With Gov. Sp. | Region | Mean | Median | Minimum | Maximum | Std. Dev. |
| | OECD-EU | 22.20 | 20.09 | 8.07 | 72.08 | 10.17 |
| | Latin | 44.09 | 42.71 | 22.64 | 71.79 | 12.31 |
| | Asia | 37.26 | 36.79 | 10.65 | 78.09 | 13.96 |

One potential criticism of the simple methodology we propose could be the specific balanced budget assumption we make for the government. Specifically, we assumed that for any government revenues equal spending. This allowed us to use share of government spending as a proxy for the level of tax burden in a country. We made this simplifying assumption to construct the largest dataset possible, as data for government spending is available in PWT for a very large number of countries whereas tax burden data (for example from Government Finance Statistics of the IMF or from World Development Indicators) is much more limited. Nevertheless, in one of the robustness checks, instead of using government spending share from PWT as the measure $\tau_t$, we directly obtain the tax burden (tax revenue as % of GDP). In that case we can only construct data for 98 countries and lose data for most of the subsaharan and post-socialist transition economies. Moreover, the time-series dimension of our dataset is now reduced to the period from 1960 to 2009. We present descriptive statistics for this exercise (for unweighted data) in Table 4. Observe that there is no significant difference between two panels in the table. Moreover, we should also mention that the correlation between unweighted shadow economy series is 0.92 for the OECD-EU group, 0.84 for Latin American and Caribbean economies and 0.90 for Asian-Australian countries.

## 5.2 Sensitivity Analysis

Remember that In the data construction stage of the benchmark case we have assumed that $\gamma = 0.425$, $\delta = 0.08$ and $\alpha = 0.36$. In this subsection we will first relax these three assumptions one-by-one and present descriptive statistics for unweighted data.

**Table 5: Descriptive Statistics with Different $\gamma$**

| $\gamma = 0.35$ | Region | Mean | Median | Minimum | Maximum | Std. Dev. |
|---|---|---|---|---|---|---|
| | OECD-EU | 23.61 | 21.10 | 8.12 | 72.18 | 11.25 |
| | Latin | 45.50 | 44.35 | 22.67 | 74.38 | 12.76 |
| | Post-Socialist | 34.94 | 33.98 | 14.16 | 80.35 | 12.10 |
| | MENA | 29.08 | 27.85 | 15.16 | 64.14 | 11.82 |
| | Sub-saharan | 44.01 | 41.79 | 22.03 | 79.14 | 10.58 |
| | Asia | 38.45 | 37.71 | 10.77 | 78.19 | 12.21 |
| | World | 36.59 | 35.95 | 8.12 | 80.35 | 14.75 |
| $\gamma = 0.50$ | Region | Mean | Median | Minimum | Maximum | Std. Dev. |
| | OECD-EU | 23.43 | 21.01 | 7.99 | 71.15 | 11.45 |
| | Latin | 45.06 | 44.04 | 22.33 | 73.30 | 13.03 |
| | Post-Socialist | 34.21 | 33.57 | 13.82 | 79.12 | 11.08 |
| | MENA | 28.22 | 26.98 | 14.97 | 62.87 | 11.38 |
| | Sub-saharan | 43.10 | 39.98 | 21.11 | 78.02 | 10.55 |
| | Asia | 37.45 | 36.28 | 10.11 | 77.18 | 14.77 |
| | World | 35.51 | 34.79 | 7.99 | 79.12 | 15.20 |

To this end, first we relax the assumption that $\gamma = 0.425$. In this case, we let $\gamma$ to vary between 0.35 and 0.5. In Table 5 we report descriptive statistics of unweighted shadow economy estimates (similar to Table 1) for different regions using these two different values for $\gamma$. As we can see from Table 1, results are not significantly different from the benchmark case. Especially, we note that the cross-country (or cross-regional) and time-series correlations do not significantly change when we let $\gamma$ to take different values than the benchmark.

In similar exercises, we change the values of $\delta$ and $\alpha$ in tables 6 and 7. In all cases, we end with descriptive statistics which are not significantly different than the those in the benchmark case.

The final robustness check we perform is regarding the construction of the $\{\theta_{S_t}\}$ series. Remember that in the benchmark case, we have choosen $\theta_{S_{2007}}$ to match the shadow economy size in 2007 for any country with the shadow economy estimates reported in Schneider et al. (2010) and then constructed

**Table 6: Descriptive Statistics with Different $\delta$**

| $\delta = 0.06$ | Region | Mean | Median | Minimum | Maximum | Std. Dev. |
|---|---|---|---|---|---|---|
| | OECD-EU | 23.40 | 21.09 | 8.05 | 71.86 | 11.30 |
| | Latin | 44.72 | 43.76 | 22.32 | 73.40 | 11.88 |
| | Post-Socialist | 33.99 | 33.42 | 14.01 | 78.42 | 11.82 |
| | MENA | 28.89 | 27.45 | 15.01 | 63.01 | 11.04 |
| | Sub-saharan | 43.78 | 41.65 | 21.72 | 78.37 | 10.46 |
| | Asia | 37.92 | 37.49 | 10.55 | 77.86 | 13.12 |
| | World | 35.97 | 35.55 | 8.05 | 78.42 | 13.80 |
| $\gamma = 0.10$ | Region | Mean | Median | Minimum | Maximum | Std. Dev. |
| | OECD-EU | 23.83 | 21.16 | 8.14 | 72.20 | 11.22 |
| | Latin | 45.98 | 45.02 | 23.02 | 74.98 | 12.75 |
| | Post-Socialist | 35.25 | 34.03 | 15.18 | 82.01 | 12.08 |
| | MENA | 29.20 | 27.82 | 15.32 | 63.77 | 11.40 |
| | Sub-saharan | 43.97 | 42.01 | 21.99 | 78.74 | 10.59 |
| | Asia | 39.01 | 38.14 | 11.03 | 79.02 | 13.77 |
| | World | 36.98 | 36.15 | 8.14 | 82.01 | 13.98 |

**Table 7: Descriptive Statistics with Different $\alpha$**

| $\alpha = 0.42$ | Region | Mean | Median | Minimum | Maximum | Std. Dev. |
|---|---|---|---|---|---|---|
| | OECD-EU | 22.15 | 20.02 | 7.18 | 71.80 | 10.98 |
| | Latin | 44.90 | 43.78 | 22.00 | 73.80 | 12.77 |
| | Post-Socialist | 34.15 | 33.25 | 14.00 | 79.75 | 12.07 |
| | MENA | 28.50 | 27.41 | 14.63 | 62.52 | 11.00 |
| | Sub-saharan | 43.61 | 41.56 | 21.45 | 78.00 | 10.45 |
| | Asia | 38.01 | 37.12 | 10.42 | 77.27 | 14.37 |
| | World | 35.39 | 35.00 | 7.18 | 79.75 | 14.07 |
| $\alpha = 0.30$ | Region | Mean | Median | Minimum | Maximum | Std. Dev. |
| | OECD-EU | 24.00 | 21.12 | 8.32 | 72.12 | 11.42 |
| | Latin | 45.55 | 44.49 | 22.75 | 74.89 | 12.56 |
| | Post-Socialist | 35.02 | 34.04 | 14.19 | 80.56 | 12.00 |
| | MENA | 29.11 | 27.82 | 15.13 | 63.17 | 11.30 |
| | Sub-saharan | 44.00 | 42.20 | 22.05 | 79.17 | 10.65 |
| | Asia | 38.47 | 37.80 | 11.01 | 78.23 | 14.56 |
| | World | 37.20 | 35.90 | 8.32 | 80.56 | 14.70 |

the rest of the $\theta_{S_t}$ series using the calculated growth rates. Now, an alternative is not to match the shadow economy size in 2007 from Schneider et al. (2010) but instead share of informal employment ($\frac{N_{S_t}}{N_{F_t}}$ in model's terms.) Using data

from Charmes (2009) we now match share of self-employment as % of non-agricultural employment in 2000.[9] for various economies. Since this data is only available for 111 countries, such an exercise again reduces the size of our dataset compared to the benchmark. Nevertheless, Table 8 reports descriptive statistics of our model's estimates with this exercise.

**Table 8: Descriptive Statistics with Different Data Matching**

| Region | Mean | Median | Minimum | Maximum | Std. Dev. |
|---|---|---|---|---|---|
| OECD-EU | 24.10 | 22.19 | 8.30 | 71.45 | 9.87 |
| Latin | 46.51 | 45.20 | 23.29 | 74.31 | 12.77 |
| Post-Socialist | 35.16 | 34.30 | 13.99 | 82.44 | 14.17 |
| MENA | 30.00 | 28.08 | 16.01 | 64.15 | 10.89 |
| Sub-saharan | 44.94 | 43.21 | 22.93 | 80.19 | 11.56 |
| Asia | 38.59 | 37.98 | 10.64 | 78.97 | 15.01 |
| World | 37.15 | 36.29 | 8.30 | 82.44 | 14.88 |

# 6 Conclusion

In this paper, using a two-sector dynamic general equilibrium model, we developed a approach to estimate the size of the shadow economy. Compared to the methods used in the current literature, this approach overcomes three main issues: First, it does not rely on ad-hoc econometric specifications and assumptions. Second, as it does not estimate the size of the shadow economy using statistical methods, it does not include statistical errors. Finally, as opposed to the currently existing methods, it does not lack micro-foundations.

In addition to presenting the new approach we also used it to estimate the size of the shadow economy in a 161-country panel data framework. With significantly larger time-dimension than the currently existing ones, this aims to be the largest dataset in the literature. Thanks to this, future research can now utilize various tools of panel data econometrics with a relatively closer focus to time-series dimension.

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[9]This is a widely used proxy for informal employment in the empirical literature on informality.

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# Appendix

**Group Compositions:**

**OECD-EU**: Australia, Austria, Belgium, Canada, Chile, Cyprus, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Japan, Korea (South), Luxemburg, Malta, Mexico, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, UK, USA

**Latin American and Caribbean**: Argentina, Bahamas, Belize, Bolivia, Brazil, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Nicaragua, Panama, Paraguay, Peru, Suriname, Trinidad and Tobago, Uruguay, Venezuela,

**Post-Socialist**: Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, FYR Macedonia, Moldova, Mongolia, Poland, Romania, Russia, Slovakia, Slovenia, Tajikistan, Ukraine,

**MENA**: Algeria, Bahrain, Egypt, Iran, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Syria, Tunisia, UAE, Yemen,

**Sub-saharan Africa**: Angola, Benin,Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Democratic Republic of Congo, Republic of Congo, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Ivory Coast, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, South Africa, Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia, Zimbabwe.

**Asia - Oceania**: Bangladesh, Bhutan, Brunei, Cambodia, China, Comoros, Fiji, Hong Kong, India, Indonesia, Laos, Macao, Malaysia, Maldives, Nepal, Pakistan, Papua New Guinea, Philippines, Singapore, Solomon Islands, Sri Lanka, Taiwan, Thailand, Vietnam,

**Shadow Economy Estimates 1950-1980**

| Year | Albania | Algeria | Angola | Argentina | Australia | Austria | Bahamas | Bahrain | Bangladesh | Belgium | Belize | Benin |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1950 | | | | 29.69 | 22.07 | 17.20 | | | | 34.96 | | |
| 1951 | | | | 29.82 | 21.88 | 17.10 | | | | 34.70 | | |
| 1952 | | | | 29.53 | 21.51 | 16.89 | | | | 34.48 | | |
| 1953 | | | | 29.51 | 21.66 | 16.84 | | | | 34.24 | | |
| 1954 | | | | 29.38 | 21.61 | 16.90 | | | | 34.06 | | |
| 1955 | | | | 29.34 | 21.44 | 16.89 | | | | 33.78 | | |
| 1956 | | | | 29.10 | 21.26 | 16.65 | | | | 33.54 | | |
| 1957 | | | | 29.08 | 21.18 | 16.51 | | | | 33.17 | | |
| 1958 | | | | 28.95 | 21.07 | 16.34 | | | | 32.74 | | |
| 1959 | | | | 28.68 | 20.89 | 16.15 | | | 48.23 | 32.59 | | 66.65 |
| 1960 | | 36.61 | | 28.56 | 20.73 | 15.98 | | | 49.08 | 32.41 | | 65.82 |
| 1961 | | 36.35 | | 28.15 | 20.47 | 15.66 | | | 49.85 | 32.14 | | 65.05 |
| 1962 | | 35.75 | | 27.68 | 20.37 | 15.32 | | | 50.52 | 31.75 | | 64.36 |
| 1963 | | 35.91 | | 27.36 | 20.19 | 15.06 | | | 50.62 | 31.28 | | 63.94 |
| 1964 | | 36.10 | | 27.32 | 19.98 | 14.83 | | | 51.05 | 31.02 | | 63.52 |
| 1965 | | 36.44 | | 27.10 | 19.68 | 14.52 | | | 51.15 | 30.48 | | 63.28 |
| 1966 | | 36.75 | | 26.82 | 19.51 | 14.23 | | | 51.15 | 30.02 | | 63.24 |
| 1967 | | 37.24 | | 26.62 | 19.25 | 13.89 | | | 51.11 | 29.50 | | 63.05 |
| 1968 | | 37.41 | | 26.37 | 19.07 | 13.64 | | | 50.95 | 29.08 | | 62.34 |
| 1969 | | 37.38 | | 26.16 | 18.78 | 13.35 | | | 50.22 | 28.76 | | 61.55 |
| 1970 | 39.49 | 37.09 | 41.85 | 25.76 | 18.60 | 13.10 | 32.76 | 17.12 | 49.82 | 28.21 | 54.09 | 60.62 |
| 1971 | 38.91 | 36.58 | 41.51 | 25.38 | 18.29 | 12.83 | 33.23 | 17.19 | 49.65 | 27.77 | 53.30 | 60.15 |
| 1972 | 38.38 | 36.46 | 41.00 | 25.01 | 18.11 | 12.61 | 33.68 | 17.21 | 49.79 | 27.39 | 52.57 | 59.82 |
| 1973 | 37.81 | 36.17 | 40.64 | 24.67 | 17.98 | 12.36 | 34.13 | 17.23 | 50.82 | 27.13 | 51.73 | 58.79 |
| 1974 | 37.35 | 35.58 | 39.97 | 24.45 | 17.69 | 12.10 | 34.50 | 17.20 | 50.92 | 26.83 | 51.14 | 58.28 |
| 1975 | 36.93 | 34.68 | 39.32 | 24.22 | 17.58 | 11.82 | 34.97 | 16.79 | 51.16 | 26.35 | 50.69 | 57.20 |
| 1976 | 36.52 | 33.77 | 38.98 | 24.01 | 17.51 | 11.69 | 35.57 | 17.51 | 51.34 | 26.16 | 49.81 | 56.18 |
| 1977 | 36.14 | 33.11 | 38.88 | 23.77 | 17.44 | 11.55 | 36.09 | 17.22 | 51.31 | 25.88 | 48.84 | 55.83 |
| 1978 | 35.78 | 32.25 | 38.68 | 23.38 | 17.35 | 11.38 | 36.52 | 17.31 | 50.85 | 25.63 | 48.17 | 55.63 |
| 1979 | 35.42 | 31.27 | 38.50 | 23.20 | 17.23 | 11.30 | 37.08 | 17.15 | 50.33 | 25.43 | 47.41 | 55.59 |
| 1980 | 35.07 | 30.62 | 39.26 | 22.99 | 17.15 | 11.13 | 37.27 | 16.81 | 49.40 | 25.26 | 46.31 | 54.74 |

**Shadow Economy Estimates 1950-1980**

| Year | Bhutan | Bolivia | Botswana | Brazil | Brunei | Bulgaria | Burkina Faso | Burundi | Cambodia | Cameroon | Canada | Cape Verde |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1950 | | 72.39 | | 63.86 | | | | | | | 24.24 | |
| 1951 | | 72.65 | | 63.05 | | | | | | | 24.01 | |
| 1952 | | 72.07 | | 61.93 | | | | | | | 23.82 | |
| 1953 | | 71.91 | | 60.25 | | | | | | | 23.67 | |
| 1954 | | 72.43 | | 59.98 | | | | | | | 23.49 | |
| 1955 | | 72.29 | | 59.14 | | | | | | | 23.47 | |
| 1956 | | 71.19 | | 58.30 | | | | | | | 23.33 | |
| 1957 | | 70.41 | | 57.99 | | | | | | | 23.06 | |
| 1958 | | 70.10 | | 56.99 | | | | | | | 22.80 | |
| 1959 | | 70.15 | | 56.26 | | | 52.97 | | | | 22.66 | |
| 1960 | | 70.34 | | 55.01 | | | 53.82 | 52.82 | | 42.45 | 22.53 | 49.73 |
| 1961 | | 70.19 | | 54.35 | | | 54.59 | 53.06 | | 42.80 | 22.38 | 48.77 |
| 1962 | | 70.06 | | 53.60 | | | 55.32 | 53.26 | | 43.10 | 22.28 | 47.41 |
| 1963 | | 69.14 | | 52.83 | | | 56.02 | 53.14 | | 43.35 | 22.16 | 46.64 |
| 1964 | | 68.49 | | 52.54 | | | 56.73 | 53.44 | | 43.55 | 22.05 | 46.99 |
| 1965 | | 67.83 | | 52.25 | | | 57.73 | 53.68 | | 43.57 | 21.91 | 47.44 |
| 1966 | | 67.45 | | 51.68 | | | 58.05 | 53.90 | | 43.25 | 21.74 | 47.70 |
| 1967 | | 67.11 | | 51.05 | | | 58.34 | 53.85 | | 42.67 | 21.46 | 47.13 |
| 1968 | | 66.77 | | 50.76 | | | 58.42 | 53.52 | | 42.41 | 21.27 | 47.35 |
| 1969 | | 66.58 | | 50.18 | | | 58.67 | 52.95 | | 42.13 | 21.12 | 47.23 |
| 1970 | 50.36 | 66.39 | | 48.96 | 35.90 | | 58.47 | 52.34 | 55.93 | 41.97 | 20.87 | 46.50 |
| 1971 | 50.03 | 66.35 | | 48.06 | 37.14 | 47.16 | 58.16 | 52.48 | 55.90 | 41.46 | 20.70 | 45.51 |
| 1972 | 49.72 | 65.99 | | 47.05 | 38.11 | 46.27 | 56.43 | 51.28 | 56.04 | 40.63 | 20.56 | 44.72 |
| 1973 | 49.47 | 65.32 | | 45.92 | 38.95 | 45.38 | 55.50 | 52.03 | 56.29 | 39.85 | 20.46 | 44.09 |
| 1974 | 49.24 | 65.13 | | 44.58 | 39.90 | 44.49 | 54.54 | 51.99 | 56.77 | 39.13 | 20.27 | 43.56 |
| 1975 | 49.00 | 65.00 | 60.02 | 43.30 | 40.75 | 43.62 | 52.82 | 51.17 | 57.03 | 38.73 | 20.02 | 43.14 |
| 1976 | 48.88 | 64.00 | 57.76 | 42.06 | 41.44 | 42.74 | 52.43 | 50.91 | 57.08 | 38.06 | 19.91 | 42.51 |
| 1977 | 48.63 | 63.72 | 55.84 | 40.95 | 41.89 | 41.83 | 51.87 | 50.24 | 57.13 | 37.78 | 19.69 | 42.03 |
| 1978 | 48.36 | 63.16 | 55.88 | 40.12 | 42.42 | 40.98 | 51.64 | 48.66 | 57.34 | 36.95 | 19.54 | 41.54 |
| 1979 | 48.03 | 62.19 | 55.23 | 39.38 | 42.86 | 40.11 | 51.10 | 47.42 | 57.80 | 35.62 | 19.42 | 41.27 |
| 1980 | 47.59 | 61.92 | 54.07 | 38.76 | 43.09 | 39.28 | 49.50 | 46.39 | 58.66 | 34.64 | 19.21 | 41.14 |

## Shadow Economy Estimates 1950-1980

| Country / Year | Central African Rep. | Chad | Chile | China | Colombia | Comoros | Congo, Dem. Rep. | Congo, Rep. | Costa Rica | Côte d'Ivoire | Cyprus |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1950 | | | | | 55.05 | | 43.70 | | 42.55 | | 47.17 |
| 1951 | | | 29.23 | | 54.36 | | 43.70 | | 42.58 | | 46.77 |
| 1952 | | | 28.45 | 34.06 | 53.91 | | 43.39 | | 42.49 | | 46.00 |
| 1953 | | | 27.95 | 34.12 | 53.38 | | 42.66 | | 42.11 | | 45.30 |
| 1954 | | | 27.09 | 34.00 | 52.74 | | 41.73 | | 41.56 | | 44.65 |
| 1955 | | | 26.91 | 33.62 | 51.71 | | 41.05 | | 41.27 | | 43.06 |
| 1956 | | | 26.51 | 33.47 | 50.78 | | 40.39 | | 40.78 | | 41.14 |
| 1957 | | | 26.05 | 33.16 | 50.04 | | 39.82 | | 40.31 | | 39.49 |
| 1958 | | | 25.68 | 32.90 | 49.55 | | 39.36 | | 39.76 | | 38.18 |
| 1959 | | | 25.35 | 32.05 | 49.41 | | 39.23 | | 39.47 | | 38.02 |
| 1960 | 40.98 | 59.59 | 25.25 | 30.48 | 49.21 | 45.39 | 39.27 | 68.19 | 38.92 | 59.37 | 38.36 |
| 1961 | 40.70 | 60.06 | 24.83 | 29.29 | 48.86 | 45.03 | 39.72 | 63.95 | 38.54 | 58.46 | 38.38 |
| 1962 | 40.10 | 60.52 | 24.58 | 29.33 | 48.39 | 45.57 | 40.23 | 61.16 | 38.18 | 57.45 | 38.08 |
| 1963 | 39.76 | 60.99 | 24.16 | 29.77 | 48.11 | 44.66 | 41.27 | 60.48 | 37.71 | 57.05 | 37.41 |
| 1964 | 39.16 | 61.36 | 23.57 | 29.97 | 47.99 | 44.45 | 41.28 | 60.53 | 37.28 | 55.84 | 36.70 |
| 1965 | 38.92 | 61.98 | 23.28 | 29.91 | 47.64 | 43.85 | 41.14 | 60.56 | 37.14 | 54.13 | 36.88 |
| 1966 | 38.74 | 62.58 | 23.06 | 29.60 | 47.44 | 42.81 | 41.01 | 59.95 | 36.64 | 53.01 | 36.44 |
| 1967 | 38.94 | 62.95 | 23.19 | 29.06 | 47.10 | 41.20 | 41.09 | 58.66 | 36.15 | 51.96 | 36.05 |
| 1968 | 38.54 | 63.20 | 23.18 | 28.95 | 46.81 | 40.13 | 41.33 | 57.42 | 35.67 | 51.28 | 35.53 |
| 1969 | 38.54 | 63.17 | 23.09 | 28.85 | 46.29 | 39.68 | 41.58 | 56.64 | 35.27 | 50.57 | 35.09 |
| 1970 | 38.37 | 63.35 | 22.99 | 28.74 | 45.80 | 39.47 | 41.31 | 56.03 | 34.74 | 49.56 | 34.37 |
| 1971 | 38.27 | 63.38 | 22.93 | 28.14 | 45.21 | 38.59 | 41.04 | 55.47 | 34.20 | 48.43 | 33.80 |
| 1972 | 38.07 | 63.49 | 22.86 | 27.54 | 44.74 | 37.80 | 40.83 | 54.78 | 33.46 | 47.49 | 33.25 |
| 1973 | 37.81 | 63.37 | 23.04 | 27.18 | 44.35 | 37.14 | 40.59 | 54.27 | 33.02 | 46.58 | 32.77 |
| 1974 | 38.08 | 63.55 | 23.36 | 26.66 | 43.95 | 36.50 | 40.49 | 53.77 | 32.39 | 45.66 | 32.16 |
| 1975 | 38.48 | 62.84 | 23.13 | 26.23 | 43.26 | 35.92 | 40.40 | 53.42 | 31.78 | 44.88 | 31.74 |
| 1976 | 39.02 | 61.51 | 23.47 | 25.69 | 43.04 | 35.36 | 40.38 | 53.17 | 31.44 | 44.08 | 31.91 |
| 1977 | 39.49 | 60.38 | 23.80 | 25.35 | 42.72 | 35.30 | 40.33 | 52.89 | 30.88 | 43.19 | 32.20 |
| 1978 | 39.72 | 59.88 | 24.05 | 24.99 | 42.20 | 34.82 | 40.29 | 52.98 | 30.21 | 41.69 | 32.00 |
| 1979 | 40.01 | 59.48 | 24.18 | 24.38 | 41.66 | 34.47 | 40.30 | 52.86 | 29.65 | 40.27 | 31.66 |
| 1980 | 40.53 | 59.32 | 24.21 | 23.90 | 41.23 | 34.15 | 40.30 | 52.18 | 29.03 | 39.52 | 31.15 |

**Shadow Economy Estimates 1950-1980**

| Year | Denmark | Dominican Rep. | Ecuador | Egypt | El Salvador | Ethiopia | Fiji | Finland | France | Gabon | Gambia |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1950 | 27.40 | | | 62.28 | 64.93 | 51.16 | | 29.18 | 23.68 | | |
| 1951 | 27.27 | 58.40 | 45.77 | 62.66 | 65.21 | 52.25 | | 29.13 | 23.61 | | |
| 1952 | 27.37 | 58.48 | 45.21 | 63.02 | 65.23 | 53.04 | | 28.80 | 23.48 | | |
| 1953 | 27.49 | 57.39 | 45.07 | 63.12 | 65.17 | 53.68 | | 28.32 | 23.44 | | |
| 1954 | 27.45 | 56.90 | 44.50 | 62.85 | 65.02 | 53.59 | | 28.20 | 23.50 | | |
| 1955 | 27.35 | 56.52 | 43.57 | 62.49 | 65.04 | 52.96 | | 27.82 | 23.47 | | |
| 1956 | 27.40 | 55.73 | 42.65 | 62.14 | 64.99 | 52.24 | | 27.38 | 23.48 | | |
| 1957 | 27.35 | 54.87 | 41.89 | 62.27 | 64.24 | 51.87 | | 27.00 | 23.26 | | |
| 1958 | 27.20 | 54.02 | 41.26 | 62.30 | 63.41 | 51.24 | | 26.69 | 23.05 | | |
| 1959 | 27.26 | 53.29 | 40.81 | 62.02 | 63.09 | 49.54 | | 26.24 | 22.77 | | |
| 1960 | 27.02 | 53.27 | 40.29 | 61.51 | 63.33 | 49.12 | 44.13 | 26.04 | 22.59 | 76.76 | 55.08 |
| 1961 | 26.64 | 53.67 | 39.72 | 61.16 | 62.32 | 47.95 | 43.94 | 25.58 | 22.27 | 75.18 | 56.08 |
| 1962 | 26.27 | 54.32 | 39.21 | 60.41 | 61.79 | 46.84 | 43.78 | 25.05 | 21.94 | 72.83 | 56.87 |
| 1963 | 25.84 | 54.27 | 38.92 | 59.39 | 61.34 | 45.79 | 43.82 | 24.58 | 21.59 | 70.57 | 58.58 |
| 1964 | 25.63 | 53.63 | 38.58 | 58.32 | 60.78 | 44.84 | 43.72 | 24.36 | 21.23 | 69.50 | 59.02 |
| 1965 | 25.20 | 52.56 | 38.24 | 57.08 | 59.39 | 44.09 | 43.58 | 24.04 | 20.80 | 68.90 | 60.31 |
| 1966 | 24.74 | 53.17 | 37.98 | 55.91 | 58.50 | 43.32 | 43.19 | 23.60 | 20.42 | 68.87 | 60.82 |
| 1967 | 24.38 | 52.87 | 37.74 | 55.02 | 57.36 | 42.46 | 42.92 | 23.16 | 20.02 | 67.27 | 60.88 |
| 1968 | 24.00 | 52.49 | 37.25 | 54.64 | 56.82 | 41.47 | 42.72 | 22.82 | 19.64 | 67.14 | 61.28 |
| 1969 | 23.64 | 52.23 | 36.73 | 54.50 | 56.84 | 40.61 | 41.78 | 22.58 | 19.28 | 66.98 | 61.07 |
| 1970 | 23.21 | 51.46 | 36.40 | 54.22 | 56.73 | 39.99 | 41.15 | 22.30 | 18.77 | 66.76 | 60.65 |
| 1971 | 22.85 | 50.44 | 36.21 | 53.90 | 56.46 | 39.77 | 40.67 | 21.84 | 18.44 | 66.30 | 61.61 |
| 1972 | 22.54 | 49.26 | 35.57 | 53.73 | 55.72 | 39.46 | 40.04 | 21.44 | 18.17 | 65.59 | 60.94 |
| 1973 | 22.24 | 48.04 | 35.33 | 53.10 | 55.26 | 39.08 | 39.38 | 21.20 | 17.91 | 64.87 | 60.33 |
| 1974 | 21.87 | 46.36 | 34.90 | 51.56 | 54.41 | 38.90 | 38.58 | 20.96 | 17.64 | 65.25 | 60.86 |
| 1975 | 21.59 | 44.79 | 34.12 | 49.96 | 53.16 | 38.80 | 38.15 | 20.51 | 17.34 | 60.89 | 61.98 |
| 1976 | 21.51 | 43.44 | 33.20 | 47.84 | 52.36 | 38.73 | 37.59 | 20.26 | 17.26 | 57.11 | 62.53 |
| 1977 | 21.33 | 42.47 | 32.58 | 46.09 | 51.52 | 38.88 | 37.24 | 20.07 | 17.20 | 52.17 | 62.16 |
| 1978 | 21.17 | 41.55 | 31.88 | 44.68 | 50.00 | 38.94 | 36.96 | 19.92 | 17.06 | 49.24 | 60.66 |
| 1979 | 21.08 | 40.75 | 31.06 | 43.02 | 48.73 | 39.21 | 36.65 | 19.93 | 16.89 | 49.29 | 59.87 |
| 1980 | 20.94 | 39.94 | 30.47 | 41.23 | 48.17 | 39.14 | 35.98 | 19.84 | 16.74 | 48.79 | 59.21 |

## Shadow Economy Estimates 1950-1980

| Country / Year | Germany | Ghana | Greece | Guatemala | Guinea | Guinea-Bissau | Guyana | Haiti | Honduras | Hong Kong | Hungary |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1950 | | | | 74.30 | | | | | 66.24 | | |
| 1951 | | | 49.29 | 73.85 | | | | | 66.59 | | |
| 1952 | | | 49.16 | 73.52 | | | | | 66.42 | | |
| 1953 | | | 49.63 | 73.80 | | | | | 65.99 | | |
| 1954 | | | 49.41 | 73.86 | | | | | 65.45 | | |
| 1955 | | 48.03 | 49.74 | 74.03 | | | | | 65.78 | | |
| 1956 | | 45.85 | 49.76 | 73.08 | | | | | 65.88 | | |
| 1957 | | 43.86 | 49.38 | 71.17 | | | | | 65.90 | | |
| 1958 | | 42.87 | 48.92 | 69.50 | | | | | 65.80 | | |
| 1959 | | 41.93 | 48.19 | 68.64 | 49.15 | | | | 66.15 | | |
| 1960 | | 40.38 | 47.37 | 68.19 | 49.73 | 52.45 | | 63.21 | 66.32 | 33.53 | |
| 1961 | | 38.83 | 46.49 | 68.09 | 50.09 | 51.18 | | 64.09 | 66.43 | 32.81 | |
| 1962 | | 38.11 | 44.96 | 68.29 | 50.10 | 50.35 | | 65.08 | 66.78 | 32.32 | |
| 1963 | | 37.48 | 43.82 | 68.47 | 49.88 | 49.51 | | 65.93 | 66.50 | 31.35 | |
| 1964 | | 36.84 | 42.59 | 67.96 | 50.16 | 48.51 | | 66.76 | 66.00 | 30.33 | |
| 1965 | | 35.57 | 41.12 | 66.99 | 50.33 | 47.66 | | 67.66 | 65.87 | 29.21 | |
| 1966 | | 35.20 | 39.58 | 66.16 | 50.25 | 47.23 | | 68.54 | 65.40 | 27.88 | |
| 1967 | | 34.98 | 38.50 | 65.72 | 50.03 | 46.99 | | 69.51 | 64.75 | 27.05 | |
| 1968 | | 35.32 | 37.60 | 64.98 | 50.07 | 46.66 | | 70.45 | 63.59 | 26.63 | |
| 1969 | | 35.58 | 36.69 | 63.66 | 50.15 | 46.40 | | 71.27 | 62.55 | 26.39 | |
| 1970 | 18.57 | 35.30 | 35.50 | 63.22 | 50.26 | 45.93 | 34.86 | 71.29 | 61.53 | 26.24 | 32.44 |
| 1971 | 18.34 | 35.25 | 34.41 | 62.48 | 50.33 | 44.27 | 34.60 | 71.44 | 61.07 | 26.09 | 32.08 |
| 1972 | 18.15 | 35.01 | 33.28 | 61.52 | 50.34 | 43.24 | 34.57 | 71.09 | 61.02 | 25.69 | 31.79 |
| 1973 | 17.95 | 35.51 | 32.21 | 61.11 | 50.33 | 42.72 | 34.49 | 70.47 | 61.05 | 25.29 | 31.55 |
| 1974 | 17.74 | 35.62 | 30.94 | 60.39 | 50.32 | 42.67 | 34.26 | 69.40 | 58.87 | 24.85 | 31.32 |
| 1975 | 17.61 | 35.31 | 30.38 | 59.04 | 50.25 | 43.57 | 33.81 | 67.85 | 57.89 | 24.46 | 30.94 |
| 1976 | 17.55 | 35.24 | 29.97 | 58.33 | 50.17 | 44.30 | 32.73 | 66.39 | 57.48 | 24.28 | 30.45 |
| 1977 | 17.45 | 35.31 | 29.48 | 56.98 | 49.99 | 44.75 | 31.75 | 64.79 | 57.01 | 23.82 | 30.00 |
| 1978 | 17.35 | 35.02 | 29.19 | 55.60 | 49.90 | 44.70 | 31.37 | 63.19 | 56.27 | 23.26 | 29.48 |
| 1979 | 17.26 | 35.41 | 28.89 | 54.28 | 49.73 | 44.46 | 31.45 | 61.77 | 55.10 | 22.91 | 28.87 |
| 1980 | 17.11 | 35.34 | 28.78 | 53.53 | 49.63 | 43.58 | 31.05 | 60.05 | 53.89 | 22.39 | 28.52 |

**Shadow Economy Estimates 1950-1980**

| Country / Year | Iceland | India | Indonesia | Iran | Ireland | Israel | Italy | Jamaica | Japan | Jordan | Kenya |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1950 | 26.36 | 40.39 | | | 27.87 | 40.68 | 50.48 | | 23.68 | | 38.32 |
| 1951 | 26.22 | 40.64 | | | 27.76 | 40.15 | 50.25 | | 24.12 | | 37.88 |
| 1952 | 26.12 | 40.77 | | | 27.52 | 38.96 | 49.84 | | 23.99 | | 37.39 |
| 1953 | 26.00 | 41.05 | | | 27.45 | 37.93 | 49.53 | 48.40 | 24.07 | | 36.98 |
| 1954 | 25.78 | 41.16 | | | 27.29 | 37.43 | 48.99 | 47.89 | 24.16 | 28.02 | 36.57 |
| 1955 | 25.58 | 40.96 | | 31.06 | 27.16 | 36.95 | 48.46 | 47.20 | 24.21 | 28.14 | 36.03 |
| 1956 | 24.91 | 40.61 | | 31.07 | 26.90 | 35.90 | 47.60 | 46.45 | 24.14 | 28.68 | 35.37 |
| 1957 | 24.49 | 40.12 | | 30.82 | 26.80 | 35.85 | 46.70 | 45.64 | 23.99 | 28.77 | 34.87 |
| 1958 | 24.18 | 39.84 | | 30.33 | 26.85 | 35.29 | 45.76 | 44.48 | 23.55 | 28.77 | 34.48 |
| 1959 | 23.69 | 39.59 | | 29.68 | 26.91 | 34.68 | 45.05 | 43.59 | 23.29 | 29.26 | 34.35 |
| 1960 | 23.24 | 39.31 | 32.78 | 29.06 | 26.75 | 33.99 | 44.16 | 43.01 | 23.01 | 29.37 | 34.33 |
| 1961 | 22.95 | 38.66 | 33.08 | 28.34 | 26.69 | 33.45 | 43.26 | 42.34 | 22.47 | 29.19 | 34.30 |
| 1962 | 22.67 | 38.08 | 33.08 | 27.86 | 26.48 | 32.82 | 42.16 | 41.87 | 21.72 | 28.88 | 34.65 |
| 1963 | 22.63 | 37.45 | 33.13 | 27.51 | 26.25 | 32.16 | 41.01 | 41.63 | 21.05 | 28.38 | 34.99 |
| 1964 | 22.33 | 36.84 | 33.37 | 27.08 | 25.92 | 31.72 | 40.03 | 41.50 | 20.44 | 28.35 | 35.22 |
| 1965 | 21.95 | 36.15 | 33.59 | 26.57 | 25.50 | 30.93 | 39.25 | 41.17 | 19.78 | 27.83 | 35.61 |
| 1966 | 21.47 | 35.56 | 33.66 | 25.83 | 25.12 | 30.13 | 38.73 | 40.77 | 19.27 | 27.24 | 35.88 |
| 1967 | 20.93 | 35.09 | 33.71 | 25.20 | 24.75 | 29.43 | 38.33 | 40.26 | 18.75 | 27.32 | 35.79 |
| 1968 | 20.38 | 34.69 | 33.90 | 24.42 | 24.46 | 29.57 | 37.78 | 39.68 | 18.14 | 27.27 | 35.50 |
| 1969 | 20.13 | 34.41 | 33.94 | 23.68 | 24.03 | 29.20 | 37.19 | 38.81 | 17.44 | 26.99 | 34.95 |
| 1970 | 20.03 | 34.02 | 33.72 | 23.08 | 23.44 | 28.45 | 36.57 | 37.90 | 16.77 | 25.64 | 34.35 |
| 1971 | 20.18 | 33.64 | 33.25 | 22.67 | 23.07 | 28.01 | 35.86 | 37.23 | 16.03 | 25.62 | 33.52 |
| 1972 | 19.62 | 33.23 | 32.61 | 22.34 | 22.57 | 27.41 | 35.32 | 36.62 | 15.44 | 24.99 | 32.88 |
| 1973 | 19.54 | 32.97 | 31.80 | 21.83 | 22.12 | 26.38 | 34.97 | 26.23 | 14.98 | 24.12 | 32.42 |
| 1974 | 19.29 | 32.62 | 30.97 | 21.32 | 21.61 | 25.72 | 34.44 | 35.67 | 14.44 | 23.99 | 31.93 |
| 1975 | 18.79 | 32.28 | 29.96 | 20.37 | 21.29 | 25.16 | 33.75 | 35.65 | 14.03 | 23.38 | 31.59 |
| 1976 | 18.42 | 31.93 | 29.02 | 19.40 | 21.05 | 24.75 | 33.63 | 35.47 | 13.78 | 22.95 | 31.67 |
| 1977 | 18.31 | 31.59 | 28.18 | 18.43 | 20.88 | 24.60 | 33.29 | 35.79 | 13.55 | 22.32 | 31.65 |
| 1978 | 18.04 | 31.25 | 27.30 | 17.71 | 20.53 | 24.43 | 33.02 | 36.40 | 13.35 | 21.00 | 31.36 |
| 1979 | 17.88 | 30.79 | 26.41 | 17.47 | 20.26 | 24.44 | 32.88 | 36.88 | 13.15 | 20.05 | 30.95 |
| 1980 | 17.84 | 30.25 | 25.66 | 17.29 | 19.77 | 24.15 | 32.66 | 37.07 | 12.93 | 19.66 | 30.86 |

## Shadow Economy Estimates 1950-1980

| Country / Year | Korea Rep. | Laos | Lebanon | Lesotho | Liberia | Luxem-bourg | Macao | Madagas-car | Malawi | Malaysia | Maldives |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1950 | | | | | | 14.75 | | | | | |
| 1951 | | | | | | 14.45 | | | | | |
| 1952 | | | | | | 14.38 | | | | | |
| 1953 | 65.59 | | | | | 14.21 | | | | | |
| 1954 | 66.04 | | | | | 13.94 | | | 59.84 | | |
| 1955 | 66.77 | | | | | 13.74 | | | 60.54 | 67.35 | |
| 1956 | 67.28 | | | | | 13.61 | | | 59.82 | 67.92 | |
| 1957 | 68.34 | | | | | 13.46 | | | 59.49 | 68.23 | |
| 1958 | 68.31 | | | | | 13.22 | | | 58.17 | 68.28 | |
| 1959 | 68.67 | | | | | 13.06 | | | 56.04 | 68.42 | |
| 1960 | 69.50 | | | 53.20 | | 12.93 | | 41.96 | 57.60 | 68.85 | |
| 1961 | 70.63 | | | 54.50 | | 12.79 | | 41.37 | 57.32 | 68.30 | |
| 1962 | 71.12 | | | 55.74 | | 12.63 | | 41.07 | 55.01 | 67.70 | |
| 1963 | 72.08 | | | 56.67 | | 12.42 | | 40.93 | 54.99 | 66.65 | |
| 1964 | 70.55 | | | 57.27 | | 12.30 | | 40.59 | 53.97 | 65.56 | |
| 1965 | 70.48 | | | 57.52 | | 12.12 | | 40.19 | 55.13 | 64.71 | |
| 1966 | 70.36 | | | 57.86 | | 11.98 | | 39.97 | 54.20 | 63.71 | |
| 1967 | 68.43 | | | 58.01 | | 11.83 | | 39.73 | 51.78 | 62.81 | |
| 1968 | 66.84 | | | 57.92 | | 11.80 | | 39.32 | 51.35 | 61.92 | |
| 1969 | 64.16 | | | 57.88 | | 11.82 | | 38.74 | 50.11 | 60.98 | |
| 1970 | 62.03 | 44.84 | 29.38 | 57.93 | 30.89 | 11.91 | 17.25 | 38.24 | 49.34 | 60.46 | 56.23 |
| 1971 | 60.56 | 45.35 | 29.68 | 57.74 | 30.76 | 11.86 | 17.05 | 37.76 | 46.29 | 59.41 | 55.27 |
| 1972 | 59.10 | 45.69 | 29.86 | 57.34 | 30.62 | 11.79 | 16.80 | 37.45 | 44.65 | 57.79 | 54.33 |
| 1973 | 58.46 | 46.34 | 29.68 | 56.60 | 30.66 | 11.71 | 16.55 | 37.38 | 42.18 | 56.49 | 53.44 |
| 1974 | 57.15 | 46.53 | 29.62 | 55.18 | 30.71 | 11.61 | 16.31 | 37.23 | 41.86 | 54.75 | 52.68 |
| 1975 | 54.94 | 46.94 | 29.60 | 54.06 | 30.25 | 11.54 | 16.07 | 37.07 | 41.26 | 52.29 | 51.99 |
| 1976 | 53.95 | 46.97 | 29.35 | 52.41 | 29.58 | 11.51 | 15.83 | 37.03 | 39.55 | 51.31 | 51.59 |
| 1977 | 52.50 | 46.55 | 29.60 | 49.73 | 29.02 | 11.47 | 15.59 | 37.18 | 38.73 | 50.30 | 51.25 |
| 1978 | 50.84 | 46.40 | 29.67 | 46.72 | 28.62 | 11.50 | 15.39 | 37.30 | 38.91 | 48.98 | 50.78 |
| 1979 | 48.58 | 45.98 | 29.74 | 44.74 | 28.22 | 11.44 | 15.22 | 37.27 | 36.88 | 47.84 | 50.11 |
| 1980 | 46.08 | 46.68 | 29.77 | 42.98 | 27.92 | 11.45 | 15.07 | 36.84 | 35.91 | 46.55 | 49.36 |

## Shadow Economy Estimates 1950-1980

| Country / Year | Mali | Malta | Maurita-nia | Mauritus | Mexico | Mongolia | Morocco | Mozam-bique | Namibia | Nepal | Nether-lands |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1950 | | | | 33.21 | 48.01 | | 59.42 | | | | 20.27 |
| 1951 | | | | 33.10 | 47.98 | | 58.47 | | | | 20.03 |
| 1952 | | | | 32.96 | 47.67 | | 57.02 | | | | 19.82 |
| 1953 | | | | 33.11 | 47.25 | | 56.06 | | | | 19.83 |
| 1954 | | | | 32.85 | 46.94 | | 54.75 | | | | 19.73 |
| 1955 | | | | 32.89 | 46.49 | | 53.58 | | | | 19.49 |
| 1956 | | | | 32.78 | 45.90 | | 53.49 | | | | 19.24 |
| 1957 | | | | 32.81 | 45.05 | | 53.57 | | | | 18.97 |
| 1958 | | | | 32.72 | 44.25 | | 54.57 | | | | 18.70 |
| 1959 | | | | 32.44 | 43.71 | | 54.26 | | | | 18.60 |
| 1960 | 53.85 | | 44.74 | 32.34 | 43.24 | | 54.96 | 49.69 | 37.88 | 53.69 | 18.45 |
| 1961 | 54.48 | | 43.58 | 31.54 | 42.73 | | 55.09 | 49.86 | 37.73 | 54.69 | 18.16 |
| 1962 | 55.01 | | 41.75 | 31.22 | 42.24 | | 55.50 | 49.78 | 37.66 | 55.65 | 17.95 |
| 1963 | 55.54 | | 39.75 | 31.05 | 41.85 | | 55.25 | 49.99 | 37.44 | 56.61 | 17.73 |
| 1964 | 55.75 | | 40.43 | 30.84 | 41.31 | | 54.67 | 50.22 | 37.18 | 57.43 | 17.59 |
| 1965 | 55.56 | | 40.71 | 31.03 | 40.55 | | 54.45 | 50.35 | 36.91 | 57.71 | 17.27 |
| 1966 | 55.58 | | 40.94 | 30.83 | 39.72 | | 53.97 | 50.48 | 36.49 | 58.19 | 16.99 |
| 1967 | 55.30 | | 41.35 | 31.18 | 38.93 | | 54.13 | 50.31 | 35.84 | 58.86 | 16.71 |
| 1968 | 54.90 | | 41.14 | 31.18 | 38.22 | | 53.58 | 50.13 | 35.18 | 59.40 | 16.44 |
| 1969 | 54.59 | | 40.07 | 31.47 | 37.44 | | 53.45 | 49.65 | 34.52 | 59.83 | 16.14 |
| 1970 | 54.41 | 42.36 | 39.62 | 31.43 | 36.93 | 19.50 | 52.61 | 48.92 | 33.90 | 60.44 | 15.87 |
| 1971 | 54.30 | 40.00 | 39.06 | 31.82 | 37.49 | 19.04 | 51.08 | 48.17 | 33.08 | 60.69 | 15.58 |
| 1972 | 54.96 | 38.59 | 38.47 | 32.13 | 37.19 | 18.64 | 49.80 | 47.47 | 32.35 | 60.49 | 15.34 |
| 1973 | 54.13 | 37.97 | 37.19 | 32.52 | 36.83 | 18.29 | 49.47 | 46.74 | 31.72 | 60.39 | 15.17 |
| 1974 | 53.59 | 37.51 | 36.88 | 32.10 | 36.32 | 17.94 | 48.71 | 46.01 | 31.18 | 59.86 | 15.00 |
| 1975 | 53.27 | 37.41 | 35.21 | 31.84 | 35.67 | 17.63 | 48.58 | 45.43 | 30.65 | 59.49 | 14.86 |
| 1976 | 52.68 | 37.12 | 33.62 | 31.00 | 35.08 | 17.36 | 46.05 | 44.92 | 30.18 | 58.11 | 14.77 |
| 1977 | 52.04 | 36.85 | 32.09 | 30.25 | 34.66 | 17.09 | 43.87 | 44.38 | 29.79 | 56.77 | 14.67 |
| 1978 | 51.05 | 36.58 | 31.12 | 29.65 | 34.31 | 16.78 | 41.47 | 43.97 | 29.35 | 55.44 | 14.57 |
| 1979 | 50.03 | 36.45 | 31.49 | 29.09 | 33.87 | 16.49 | 40.67 | 43.74 | 28.96 | 53.93 | 14.49 |
| 1980 | 49.31 | 35.85 | 31.78 | 28.40 | 33.28 | 16.25 | 40.18 | 43.39 | 28.87 | 53.07 | 14.49 |

**Shadow Economy Estimates 1950-1980**

| Country / Year | New Zealand | Nicaragua | Niger | Nigeria | Norway | Oman | Pakistan | Panama | Papua New Guinea | Paraguay | Peru |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1950 | 16.64 | 55.23 |  | 67.81 | 29.56 |  | 57.38 |  |  |  | 72.81 |
| 1951 | 16.45 | 55.82 |  | 68.86 | 29.10 |  | 58.32 |  |  | 56.13 | 71.22 |
| 1952 | 16.35 | 55.82 |  | 69.42 | 28.73 |  | 59.02 |  |  | 56.91 | 68.59 |
| 1953 | 16.32 | 55.23 |  | 69.76 | 28.36 |  | 59.56 |  |  | 57.29 | 65.95 |
| 1954 | 16.37 | 54.50 |  | 70.02 | 27.93 |  | 59.86 |  |  | 57.29 | 63.79 |
| 1955 | 16.17 | 53.50 |  | 70.17 | 27.53 |  | 60.12 |  |  | 57.60 | 63.00 |
| 1956 | 16.02 | 52.67 |  | 69.86 | 27.11 |  | 60.26 |  |  | 58.07 | 61.84 |
| 1957 | 15.94 | 52.16 |  | 69.72 | 26.74 |  | 60.47 |  |  | 58.63 | 60.37 |
| 1958 | 15.83 | 51.76 |  | 69.29 | 26.36 |  | 60.42 |  |  | 58.27 | 58.74 |
| 1959 | 15.74 | 51.54 |  | 69.16 | 25.98 |  | 60.29 |  |  | 58.14 | 57.74 |
| 1960 | 15.66 | 51.18 | 39.40 | 68.74 | 25.72 |  | 59.63 |  | 58.93 | 58.14 | 57.75 |
| 1961 | 15.58 | 51.11 | 39.69 | 68.39 | 25.52 |  | 58.19 |  | 59.44 | 58.03 | 57.09 |
| 1962 | 15.45 | 50.95 | 40.10 | 67.78 | 25.22 |  | 55.66 |  | 59.73 | 57.93 | 56.60 |
| 1963 | 15.38 | 50.43 | 40.10 | 67.40 | 24.94 |  | 53.48 |  | 59.89 | 58.16 | 56.04 |
| 1964 | 15.30 | 49.77 | 39.61 | 66.86 | 24.72 |  | 51.27 |  | 59.61 | 58.35 | 55.67 |
| 1965 | 15.16 | 48.57 | 39.48 | 66.04 | 24.48 |  | 49.42 |  | 58.80 | 58.55 | 55.25 |
| 1966 | 14.95 | 47.30 | 39.47 | 64.50 | 24.17 |  | 47.44 |  | 57.39 | 58.05 | 54.76 |
| 1967 | 14.72 | 45.99 | 39.53 | 63.41 | 23.86 |  | 46.63 |  | 55.86 | 57.54 | 53.85 |
| 1968 | 14.58 | 45.03 | 39.46 | 62.94 | 23.44 |  | 45.72 |  | 54.53 | 56.77 | 52.97 |
| 1969 | 14.61 | 44.53 | 39.37 | 62.83 | 23.16 |  | 44.79 |  | 53.27 | 56.18 | 53.03 |
| 1970 | 14.54 | 43.83 | 39.69 | 62.53 | 23.04 | 28.05 | 44.33 |  | 51.25 | 55.61 | 52.83 |
| 1971 | 14.45 | 43.33 | 39.67 | 60.57 | 22.75 | 28.54 | 43.71 |  | 48.29 | 55.25 | 53.55 |
| 1972 | 14.35 | 42.84 | 39.78 | 58.94 | 22.66 | 28.23 | 43.36 |  | 46.95 | 54.70 | 54.02 |
| 1973 | 14.29 | 43.01 | 39.45 | 57.34 | 22.38 | 27.76 | 43.03 |  | 46.96 | 53.85 | 54.79 |
| 1974 | 14.12 | 42.12 | 38.86 | 55.55 | 22.04 | 27.89 | 42.61 |  | 46.97 | 52.43 | 54.95 |
| 1975 | 13.81 | 40.77 | 38.24 | 54.55 | 21.78 | 27.77 | 42.07 | 70.17 | 46.78 | 50.92 | 54.36 |
| 1976 | 13.76 | 40.62 | 38.01 | 53.08 | 21.57 | 27.11 | 41.41 | 69.11 | 47.11 | 49.66 | 53.98 |
| 1977 | 13.68 | 40.45 | 37.83 | 50.86 | 21.25 | 26.28 | 40.73 | 68.43 | 45.92 | 48.19 | 53.83 |
| 1978 | 13.64 | 39.24 | 37.81 | 48.66 | 20.95 | 25.72 | 40.17 | 68.44 | 45.04 | 46.65 | 54.17 |
| 1979 | 13.69 | 39.42 | 37.39 | 47.12 | 20.84 | 25.20 | 39.78 | 68.08 | 44.19 | 44.97 | 54.64 |
| 1980 | 13.66 | 41.13 | 36.90 | 46.25 | 20.69 | 24.74 | 39.45 | 67.97 | 43.09 | 43.24 | 54.75 |

**Shadow Economy Estimates 1950-1980**

| Year | Philippines | Poland | Portugal | Romania | Rwanda | Senegal | Sierra Leone | Singapore | Solomon Islands | South Africa | Spain |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1950 | 65.13 | | 46.80 | | | | | | | 35.89 | 45.71 |
| 1951 | 64.51 | | 46.71 | | | | | | | 35.76 | 45.67 |
| 1952 | 64.07 | | 46.67 | | | | | | | 35.19 | 45.59 |
| 1953 | 63.80 | | 46.54 | | | | | | | 35.05 | 45.29 |
| 1954 | 63.14 | | 46.15 | | | | | | | 34.78 | 44.90 |
| 1955 | 62.40 | | 45.78 | | | | | | | 34.38 | 44.31 |
| 1956 | 61.70 | | 45.63 | | | | | | | 34.02 | 43.66 |
| 1957 | 60.78 | | 45.47 | | | | | | | 33.76 | 43.00 |
| 1958 | 59.62 | | 44.93 | | | | | | | 33.46 | 42.33 |
| 1959 | 58.69 | | 44.50 | | | | | | | 33.13 | 41.79 |
| 1960 | 57.61 | | 44.15 | 55.67 | 46.22 | 53.01 | | 25.12 | | 33.04 | 41.35 |
| 1961 | 57.06 | | 43.28 | 55.67 | 46.70 | 53.78 | 50.16 | 24.64 | | 32.74 | 40.61 |
| 1962 | 56.30 | | 42.16 | 54.66 | 46.95 | 54.32 | 50.51 | 24.31 | | 32.70 | 39.68 |
| 1963 | 55.69 | | 41.53 | 53.84 | 47.21 | 55.00 | 50.46 | 23.99 | | 32.81 | 38.71 |
| 1964 | 54.85 | | 40.70 | 52.61 | 47.67 | 55.45 | 49.93 | 23.59 | | 32.68 | 37.73 |
| 1965 | 53.95 | | 39.84 | 51.67 | 47.81 | 55.74 | 49.34 | 23.31 | | 32.17 | 36.69 |
| 1966 | 53.12 | | 38.84 | 50.67 | 47.89 | 55.98 | 48.70 | 22.99 | | 31.45 | 35.67 |
| 1967 | 52.38 | | 38.01 | 49.63 | 48.67 | 56.39 | 47.53 | 22.69 | | 31.11 | 34.79 |
| 1968 | 51.58 | | 37.30 | 48.42 | 49.30 | 56.86 | 47.15 | 22.37 | | 30.39 | 33.98 |
| 1969 | 50.90 | | 36.58 | 47.23 | 49.56 | 57.12 | 46.85 | 21.98 | | 29.97 | 33.11 |
| 1970 | 50.23 | 35.02 | 36.27 | 46.18 | 49.93 | 57.20 | 46.14 | 21.58 | 38.48 | 29.44 | 32.35 |
| 1971 | 49.79 | 34.79 | 35.18 | 44.92 | 50.22 | 56.97 | 45.00 | 21.10 | 38.81 | 28.82 | 31.73 |
| 1972 | 49.29 | 34.55 | 34.37 | 43.57 | 50.17 | 56.71 | 44.58 | 20.56 | 38.26 | 28.11 | 31.13 |
| 1973 | 48.86 | 34.29 | 33.50 | 42.25 | 50.69 | 56.18 | 44.19 | 20.07 | 37.75 | 27.86 | 30.52 |
| 1974 | 48.26 | 33.99 | 33.15 | 41.01 | 51.08 | 55.84 | 43.21 | 19.69 | 37.50 | 27.47 | 29.80 |
| 1975 | 47.48 | 33.62 | 32.33 | 39.60 | 50.34 | 55.63 | 42.41 | 19.09 | 36.61 | 26.88 | 29.12 |
| 1976 | 46.48 | 33.14 | 32.48 | 38.07 | 49.47 | 55.25 | 42.20 | 18.75 | 36.42 | 26.38 | 28.52 |
| 1977 | 45.31 | 32.68 | 32.32 | 36.91 | 48.52 | 55.16 | 41.88 | 18.39 | 36.17 | 26.14 | 28.15 |
| 1978 | 44.37 | 32.35 | 31.79 | 35.45 | 47.10 | 54.96 | 41.82 | 18.19 | 35.71 | 26.00 | 27.85 |
| 1979 | 43.47 | 31.91 | 31.36 | 33.95 | 46.24 | 55.03 | 41.44 | 17.96 | 35.40 | 25.94 | 27.61 |
| 1980 | 42.55 | 31.53 | 30.91 | 32.87 | 45.38 | 54.83 | 40.81 | 17.63 | 34.67 | 25.85 | 27.39 |

**Shadow Economy Estimates 1950-1980**

| Year | Sri Lanka | Sudan | Suriname | Swaziland | Sweden | Switzer-land | Syria | Taiwan | Tanzania | Thailand | Togo |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1950 | 71.82 | | | | | 11.83 | | | | | |
| 1951 | 71.38 | | | | 26.24 | 11.90 | | 75.43 | | | |
| 1952 | 70.53 | | | | 26.06 | 11.84 | | 76.26 | | | |
| 1953 | 69.70 | | | | 25.91 | 11.87 | | 76.64 | | | |
| 1954 | 69.36 | | | | 25.80 | 11.90 | | 76.37 | | | |
| 1955 | 68.97 | | | | 25.59 | 11.87 | | 76.04 | | | |
| 1956 | 67.61 | | | | 25.35 | 11.81 | | 75.88 | | | |
| 1957 | 67.14 | | | | 25.17 | 11.68 | | 75.75 | | | |
| 1958 | 66.66 | | | | 24.99 | 11.46 | | 75.61 | | | |
| 1959 | 66.17 | | | | 24.83 | 11.43 | | 75.28 | | | |
| 1960 | 65.64 | | | | 24.63 | 11.40 | 28.41 | 74.55 | | | 38.91 |
| 1961 | 65.33 | | | | 24.33 | 11.30 | 28.39 | 73.29 | | | 39.14 |
| 1962 | 65.65 | | | | 24.02 | 11.12 | 28.21 | 72.03 | | | 39.46 |
| 1963 | 64.26 | | | | 23.69 | 10.91 | 27.66 | 71.19 | | | 39.44 |
| 1964 | 63.57 | | | | 23.39 | 10.73 | 27.40 | 69.98 | | | 39.09 |
| 1965 | 63.08 | | | | 23.03 | 10.47 | 27.07 | 68.69 | | | 37.99 |
| 1966 | 62.96 | | | | 22.70 | 10.29 | 26.98 | 66.70 | | | 36.72 |
| 1967 | 62.61 | | | | 22.35 | 10.15 | 26.70 | 64.92 | | | 36.07 |
| 1968 | 62.16 | | | | 22.08 | 10.01 | 26.50 | 62.57 | | | 35.81 |
| 1969 | 61.51 | | | | 21.85 | 9.91 | 26.19 | 60.13 | | | 35.72 |
| 1970 | 60.40 | 33.12 | 40.60 | 59.68 | 21.62 | 9.82 | 25.46 | 58.05 | 78.41 | | 35.60 |
| 1971 | 59.13 | 33.49 | 41.27 | 58.73 | 21.33 | 9.68 | 25.39 | 56.04 | 76.41 | | 35.05 |
| 1972 | 58.41 | 33.92 | 41.89 | 58.13 | 21.10 | 9.54 | 25.28 | 53.97 | 74.24 | | 34.27 |
| 1973 | 57.64 | 34.38 | 42.46 | 57.16 | 20.93 | 9.41 | 24.84 | 51.98 | 72.83 | | 33.55 |
| 1974 | 57.78 | 34.55 | 42.59 | 56.28 | 20.82 | 9.27 | 24.61 | 50.07 | 71.68 | | 32.87 |
| 1975 | 57.28 | 34.41 | 42.12 | 54.41 | 20.68 | 9.02 | 24.16 | 47.55 | 70.57 | | 32.13 |
| 1976 | 56.71 | 33.98 | 41.64 | 53.29 | 20.46 | 8.95 | 23.43 | 46.13 | 69.67 | 78.09 | 31.01 |
| 1977 | 55.71 | 33.50 | 41.73 | 51.72 | 20.26 | 8.95 | 22.44 | 44.60 | 68.89 | 76.99 | 30.40 |
| 1978 | 55.19 | 33.31 | 41.49 | 49.82 | 20.21 | 8.96 | 21.50 | 43.39 | 67.75 | 75.34 | 29.26 |
| 1979 | 53.63 | 33.29 | 41.42 | 47.01 | 20.26 | 8.97 | 20.89 | 42.09 | 66.98 | 73.30 | 27.95 |
| 1980 | 53.03 | 33.35 | 41.49 | 45.30 | 20.23 | 8.97 | 20.54 | 40.60 | 66.30 | 71.99 | 27.15 |

## Shadow Economy Estimates 1950-1980

| Year | Trinidad and Tobago | Tunisia | Turkey | Uganda | United Kingdom | United States | Uruguay | Venezuela | Vietnam | Zambia | Zimbabwe |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1950 | 56.22 | | 65.26 | 60.48 | 18.38 | 13.38 | 60.67 | 39.30 | | | |
| 1951 | 55.42 | | 65.85 | 60.73 | 18.49 | 13.16 | 59.67 | 38.35 | | | |
| 1952 | 54.44 | | 66.27 | 60.61 | 18.44 | 12.99 | 58.25 | 37.40 | | | |
| 1953 | 53.59 | | 66.12 | 59.96 | 18.52 | 12.94 | 57.31 | 36.23 | | | |
| 1954 | 53.15 | | 65.67 | 59.35 | 18.54 | 12.92 | 56.99 | 35.28 | | | |
| 1955 | 52.83 | | 65.20 | 58.92 | 18.55 | 12.93 | 56.03 | 34.37 | | 49.37 | |
| 1956 | 52.05 | | 65.05 | 58.35 | 18.49 | 12.82 | 55.52 | 33.69 | | 48.23 | |
| 1957 | 51.35 | | 64.54 | 57.93 | 18.42 | 12.70 | 55.29 | 33.00 | | 46.99 | |
| 1958 | 50.02 | | 63.52 | 57.88 | 18.30 | 12.64 | 54.79 | 32.23 | | 45.88 | |
| 1959 | 48.71 | | 61.86 | 57.90 | 18.23 | 12.62 | 55.03 | 31.78 | | 45.80 | |
| 1960 | 47.32 | | 60.98 | 58.10 | 18.16 | 12.58 | 55.09 | 31.45 | | 45.60 | 74.29 |
| 1961 | 46.03 | 53.12 | 60.12 | 58.33 | 17.98 | 12.50 | 54.95 | 31.54 | | 45.34 | 73.87 |
| 1962 | 45.32 | 52.45 | 59.30 | 58.11 | 17.81 | 12.44 | 54.62 | 31.65 | | 45.21 | 73.04 |
| 1963 | 44.36 | 50.95 | 58.43 | 57.97 | 17.67 | 12.37 | 54.55 | 31.65 | | 45.21 | 73.31 |
| 1964 | 43.88 | 49.45 | 57.39 | 57.33 | 17.53 | 12.29 | 54.61 | 31.65 | | 45.53 | 73.89 |
| 1965 | 43.43 | 47.95 | 56.51 | 56.14 | 17.27 | 12.20 | 54.85 | 31.38 | | 45.84 | 74.71 |
| 1966 | 42.79 | 46.66 | 55.78 | 55.34 | 17.03 | 12.04 | 55.15 | 31.17 | | 45.11 | 75.10 |
| 1967 | 42.36 | 45.74 | 54.44 | 54.65 | 16.78 | 11.87 | 55.42 | 31.10 | | 44.24 | 75.51 |
| 1968 | 42.35 | 44.76 | 53.32 | 53.70 | 16.54 | 11.76 | 55.50 | 30.98 | | 43.19 | 75.75 |
| 1969 | 42.06 | 44.02 | 52.15 | 52.92 | 16.30 | 11.67 | 55.86 | 30.64 | | 42.28 | 73.98 |
| 1970 | 42.07 | 43.35 | 50.80 | 51.97 | 16.08 | 11.56 | 55.81 | 30.29 | 26.13 | 41.80 | 73.38 |
| 1971 | 41.77 | 43.19 | 49.77 | 51.35 | 15.87 | 11.50 | 55.53 | 29.82 | 26.17 | 40.30 | 72.58 |
| 1972 | 40.82 | 42.87 | 49.13 | 50.67 | 15.70 | 11.44 | 55.23 | 29.41 | 26.19 | 39.06 | 71.32 |
| 1973 | 40.28 | 41.95 | 48.34 | 50.72 | 15.61 | 11.35 | 55.06 | 29.07 | 26.20 | 37.90 | 70.24 |
| 1974 | 40.04 | 41.81 | 47.46 | 50.99 | 15.39 | 11.22 | 55.07 | 28.98 | 26.24 | 37.30 | 69.29 |
| 1975 | 39.13 | 41.18 | 45.50 | 51.11 | 15.24 | 11.11 | 55.15 | 28.92 | 26.27 | 36.24 | 66.77 |
| 1976 | 38.13 | 40.81 | 44.03 | 51.67 | 15.20 | 11.11 | 54.82 | 28.66 | 26.29 | 35.70 | 64.88 |
| 1977 | 37.13 | 40.30 | 42.88 | 52.45 | 15.10 | 11.07 | 54.25 | 28.23 | 26.24 | 35.98 | 64.43 |
| 1978 | 36.29 | 39.93 | 42.31 | 53.33 | 15.01 | 11.01 | 53.36 | 27.66 | 26.08 | 36.32 | 63.93 |
| 1979 | 35.05 | 39.48 | 42.09 | 54.27 | 14.93 | 10.90 | 52.34 | 27.27 | 25.93 | 36.75 | 64.64 |
| 1980 | 34.20 | 38.95 | 41.99 | 54.89 | 14.84 | 10.77 | 51.02 | 27.19 | 25.75 | 37.33 | 66.04 |

**Shadow Economy Estimates 1981-2009**

| Country / Year | Albania | Algeria | Angola | Argentina | Armenia | Australia | Austria | Azerbaijan | Bahamas | Bahrain | Bangladesh | Belarus |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 | 34.79 | 30.10 | 39.04 | 22.80 |  | 17.03 | 11.01 |  | 36.94 | 16.34 | 48.55 |  |
| 1982 | 34.42 | 29.62 | 38.83 | 22.77 |  | 16.82 | 11.00 |  | 36.82 | 15.87 | 48.11 |  |
| 1983 | 34.04 | 29.20 | 38.85 | 22.86 |  | 16.75 | 10.93 |  | 36.40 | 16.05 | 47.70 |  |
| 1984 | 33.78 | 28.83 | 38.58 | 22.91 |  | 16.65 | 10.93 |  | 36.09 | 16.03 | 47.28 |  |
| 1985 | 33.66 | 28.51 | 38.94 | 22.97 |  | 16.53 | 10.86 |  | 35.99 | 15.60 | 46.93 |  |
| 1986 | 33.56 | 28.32 | 39.21 | 23.22 |  | 16.46 | 10.81 |  | 35.57 | 15.68 | 45.81 |  |
| 1987 | 33.45 | 28.36 | 39.62 | 23.34 |  | 16.39 | 10.77 |  | 35.23 | 15.82 | 45.36 |  |
| 1988 | 33.40 | 28.55 | 39.83 | 23.43 |  | 16.30 | 10.71 |  | 34.86 | 16.01 | 45.09 |  |
| 1989 | 33.37 | 28.72 | 40.42 | 23.43 |  | 16.16 | 10.63 |  | 34.65 | 16.11 | 44.88 |  |
| 1990 | 33.11 | 28.84 | 40.89 | 23.92 |  | 16.00 | 10.57 |  | 33.84 | 16.18 | 44.69 |  |
| 1991 | 32.85 | 28.99 | 41.31 | 24.20 |  | 15.91 | 10.50 |  | 32.98 | 16.56 | 44.66 |  |
| 1992 | 33.30 | 29.21 | 41.33 | 24.24 |  | 15.88 | 10.44 |  | 32.51 | 16.46 | 44.40 |  |
| 1993 | 34.05 | 29.53 | 41.62 | 24.14 | 57.56 | 15.80 | 10.35 | 65.75 | 32.20 | 16.19 | 43.88 |  |
| 1994 | 34.62 | 29.86 | 40.55 | 23.95 | 56.83 | 15.73 | 10.35 | 65.58 | 32.11 | 16.56 | 43.33 | 53.79 |
| 1995 | 34.99 | 30.18 | 39.91 | 23.71 | 55.35 | 15.62 | 10.27 | 66.08 | 32.01 | 16.47 | 42.72 | 52.45 |
| 1996 | 35.24 | 30.52 | 42.51 | 23.63 | 54.47 | 15.51 | 10.16 | 66.12 | 31.74 | 16.69 | 42.08 | 51.91 |
| 1997 | 35.42 | 30.85 | 39.62 | 23.49 | 53.59 | 15.36 | 10.08 | 65.33 | 31.33 | 16.83 | 41.39 | 51.32 |
| 1998 | 35.79 | 31.18 | 41.51 | 23.24 | 52.77 | 15.19 | 10.01 | 64.84 | 30.70 | 16.89 | 40.63 | 50.52 |
| 1999 | 36.04 | 31.37 | 39.03 | 22.98 | 51.98 | 14.99 | 9.93 | 64.18 | 30.03 | 16.60 | 39.84 | 49.89 |
| 2000 | 36.97 | 31.57 | 39.27 | 22.92 | 51.41 | 14.80 | 9.86 | 63.82 | 29.29 | 16.82 | 39.01 | 49.56 |
| 2001 | 35.78 | 31.82 | 39.77 | 22.90 | 50.74 | 14.68 | 9.98 | 63.82 | 28.58 | 16.88 | 38.28 | 49.23 |
| 2002 | 35.44 | 31.92 | 40.06 | 22.96 | 49.89 | 14.55 | 9.71 | 63.27 | 28.11 | 17.26 | 37.58 | 48.87 |
| 2003 | 35.16 | 31.91 | 40.43 | 23.26 | 48.59 | 14.37 | 9.68 | 60.95 | 27.68 | 17.30 | 36.89 | 48.34 |
| 2004 | 34.75 | 31.84 | 40.78 | 23.41 | 46.98 | 14.14 | 9.96 | 57.56 | 27.39 | 17.32 | 36.21 | 47.46 |
| 2005 | 34.27 | 31.67 | 41.51 | 23.39 | 45.24 | 13.98 | 9.57 | 54.86 | 27.21 | 17.16 | 35.53 | 46.33 |
| 2006 | 33.64 | 31.45 | 42.31 | 23.28 | 43.24 | 13.74 | 9.54 | 53.28 | 26.76 | 17.04 | 34.81 | 44.94 |
| 2007 | 32.90 | 31.20 | 42.10 | 23.00 | 41.10 | 13.50 | 9.50 | 52.00 | 26.20 | 16.80 | 34.10 | 43.30 |
| 2008 | 32.06 | 30.87 | 41.09 | 22.64 | 39.00 | 13.23 | 9.42 | 51.21 | 25.75 | 16.32 | 33.40 | 41.67 |
| 2009 |  |  |  |  |  | 12.99 | 9.34 |  |  |  |  |  |

**Shadow Economy Estimates 1981-2009**

| Year | Belgium | Belize | Benin | Bhutan | Bolivia | Bosnia | Botswana | Brazil | Brunei | Bulgaria | Burkina Faso | Burundi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 | 24.90 | 46.39 | 53.90 | 47.29 | 62.03 |  | 52.24 | 38.04 | 43.65 | 37.73 | 48.58 | 45.64 |
| 1982 | 24.81 | 46.23 | 53.45 | 46.77 | 62.22 |  | 50.69 | 37.62 | 43.49 | 36.91 | 47.58 | 44.38 |
| 1983 | 24.75 | 46.50 | 51.76 | 46.16 | 63.04 |  | 48.90 | 37.39 | 42.19 | 36.24 | 46.84 | 43.30 |
| 1984 | 24.80 | 46.90 | 51.64 | 45.24 | 63.72 |  | 48.45 | 37.41 | 41.53 | 35.68 | 46.51 | 42.25 |
| 1985 | 24.71 | 47.02 | 51.97 | 44.49 | 64.04 |  | 48.22 | 37.41 | 41.71 | 35.12 | 46.66 | 41.33 |
| 1986 | 24.69 | 47.36 | 51.78 | 43.69 | 64.12 |  | 46.85 | 37.36 | 41.80 | 34.50 | 45.14 | 40.64 |
| 1987 | 24.64 | 47.79 | 51.72 | 43.11 | 64.22 |  | 46.99 | 37.19 | 41.81 | 33.85 | 44.06 | 40.07 |
| 1988 | 24.58 | 47.89 | 51.96 | 41.90 | 64.44 |  | 45.66 | 36.96 | 41.62 | 33.24 | 43.43 | 39.59 |
| 1989 | 24.40 | 47.64 | 51.88 | 40.71 | 65.02 |  | 48.02 | 37.00 | 41.26 | 32.58 | 42.96 | 38.99 |
| 1990 | 24.17 | 46.86 | 52.09 | 39.81 | 65.73 | 47.35 | 45.74 | 36.80 | 40.75 | 32.05 | 42.24 | 38.63 |
| 1991 | 23.86 | 46.25 | 52.33 | 38.97 | 66.12 | 45.75 | 43.47 | 37.11 | 40.04 | 31.40 | 41.69 | 38.19 |
| 1992 | 23.64 | 45.43 | 52.41 | 37.75 | 66.16 | 44.22 | 41.67 | 37.37 | 39.11 | 31.87 | 41.10 | 37.73 |
| 1993 | 23.44 | 44.97 | 52.74 | 36.28 | 66.12 | 43.00 | 40.87 | 37.47 | 38.16 | 32.32 | 40.56 | 37.22 |
| 1994 | 23.28 | 44.32 | 53.11 | 35.35 | 66.17 | 42.12 | 40.18 | 37.50 | 37.14 | 32.91 | 40.20 | 37.04 |
| 1995 | 23.12 | 44.36 | 52.98 | 34.03 | 66.35 | 41.58 | 39.61 | 37.39 | 36.07 | 33.42 | 40.24 | 37.72 |
| 1996 | 22.93 | 44.15 | 52.44 | 33.05 | 66.33 | 41.66 | 39.31 | 37.08 | 34.93 | 33.88 | 40.20 | 37.94 |
| 1997 | 22.78 | 44.07 | 52.39 | 32.45 | 65.92 | 39.39 | 39.42 | 36.98 | 33.74 | 34.40 | 40.01 | 38.34 |
| 1998 | 22.57 | 44.02 | 52.07 | 32.30 | 64.94 | 37.23 | 38.97 | 36.68 | 32.53 | 34.80 | 39.59 | 38.72 |
| 1999 | 22.43 | 44.10 | 52.00 | 32.16 | 63.67 | 35.49 | 37.46 | 36.52 | 31.93 | 34.98 | 39.56 | 39.20 |
| 2000 | 22.25 | 43.76 | 51.66 | 31.68 | 63.11 | 34.54 | 36.70 | 36.50 | 31.70 | 35.05 | 39.43 | 39.54 |
| 2001 | 21.95 | 42.76 | 51.45 | 31.27 | 62.93 | 34.11 | 35.63 | 36.35 | 31.77 | 35.02 | 39.43 | 39.88 |
| 2002 | 21.81 | 42.33 | 50.96 | 30.37 | 62.99 | 33.89 | 34.77 | 36.33 | 31.88 | 34.90 | 39.56 | 40.35 |
| 2003 | 21.71 | 42.01 | 50.70 | 29.47 | 62.91 | 33.83 | 34.01 | 36.39 | 31.61 | 34.63 | 39.87 | 40.42 |
| 2004 | 21.68 | 42.00 | 50.28 | 28.86 | 63.11 | 33.81 | 33.41 | 36.57 | 31.55 | 34.45 | 39.56 | 40.50 |
| 2005 | 21.62 | 41.96 | 49.74 | 28.06 | 63.39 | 33.43 | 32.25 | 36.61 | 31.51 | 33.92 | 39.53 | 40.41 |
| 2006 | 21.44 | 42.05 | 49.66 | 27.73 | 63.40 | 33.05 | 32.17 | 36.71 | 31.42 | 33.43 | 39.42 | 39.95 |
| 2007 | 21.30 | 42.00 | 49.10 | 27.70 | 63.50 | 32.80 | 31.90 | 36.60 | 31.20 | 32.70 | 39.60 | 39.60 |
| 2008 | 21.08 | 41.97 | 48.49 | 27.65 | 63.34 | 32.03 | 31.85 | 36.42 | 30.86 | 31.91 | 39.79 | 39.41 |
| 2009 | 20.82 |  |  |  |  |  |  |  |  |  |  |  |

**Shadow Economy Estimates 1981-2009**

| Country / Year | Cambodia | Cameroon | Canada | Cape Verde | Central African Rep. | Chad | Chile | China | Colombia | Comoros | Congo, Dem. Rep. | Congo, Rep. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 | 59.53 | 34.11 | 19.07 | 41.17 | 41.29 | 59.25 | 23.93 | 23.47 | 40.83 | 33.33 | 40.37 | 50.36 |
| 1982 | 60.39 | 33.15 | 18.80 | 41.06 | 42.11 | 59.66 | 23.40 | 23.14 | 40.31 | 33.10 | 40.38 | 47.33 |
| 1983 | 61.22 | 32.35 | 18.78 | 40.62 | 42.45 | 59.99 | 23.67 | 22.80 | 39.82 | 32.69 | 40.46 | 45.00 |
| 1984 | 61.85 | 31.60 | 18.73 | 40.25 | 42.40 | 59.70 | 24.14 | 22.38 | 39.46 | 32.51 | 40.49 | 44.00 |
| 1985 | 62.42 | 30.96 | 18.61 | 39.99 | 42.19 | 59.30 | 24.30 | 21.92 | 39.24 | 31.70 | 40.60 | 43.32 |
| 1986 | 63.06 | 30.28 | 18.47 | 39.73 | 41.92 | 58.94 | 24.45 | 21.28 | 39.23 | 31.38 | 40.67 | 43.17 |
| 1987 | 63.74 | 29.71 | 18.33 | 39.43 | 41.61 | 58.74 | 24.70 | 20.74 | 39.17 | 31.43 | 40.73 | 43.72 |
| 1988 | 63.38 | 29.41 | 18.14 | 38.95 | 41.47 | 58.56 | 24.76 | 20.24 | 39.00 | 31.36 | 40.86 | 44.44 |
| 1989 | 63.42 | 29.38 | 17.93 | 38.93 | 41.43 | 58.21 | 24.74 | 19.67 | 38.78 | 31.43 | 41.08 | 45.21 |
| 1990 | 64.04 | 29.47 | 17.66 | 38.77 | 41.38 | 57.67 | 24.45 | 19.22 | 38.70 | 31.84 | 41.57 | 46.00 |
| 1991 | 64.47 | 29.63 | 17.46 | 38.16 | 41.34 | 57.60 | 24.15 | 18.81 | 38.69 | 32.06 | 40.50 | 46.43 |
| 1992 | 64.37 | 29.93 | 17.34 | 38.18 | 41.46 | 57.43 | 24.01 | 18.40 | 38.78 | 33.07 | 40.64 | 46.87 |
| 1993 | 64.34 | 30.38 | 17.28 | 37.98 | 41.75 | 56.55 | 23.74 | 18.01 | 38.44 | 33.01 | 41.03 | 47.12 |
| 1994 | 63.35 | 30.59 | 17.24 | 38.08 | 41.88 | 57.00 | 23.21 | 17.40 | 37.72 | 33.26 | 41.48 | 47.35 |
| 1995 | 62.56 | 30.84 | 17.14 | 37.31 | 41.95 | 56.46 | 22.74 | 16.83 | 36.98 | 33.39 | 42.51 | 47.58 |
| 1996 | 60.88 | 31.12 | 17.03 | 37.21 | 42.06 | 57.64 | 22.07 | 16.21 | 36.19 | 33.88 | 42.51 | 47.69 |
| 1997 | 59.52 | 31.44 | 16.97 | 36.71 | 42.64 | 57.49 | 21.50 | 15.65 | 35.87 | 34.06 | 42.31 | 47.29 |
| 1998 | 58.15 | 31.67 | 16.80 | 36.41 | 43.05 | 56.19 | 20.96 | 15.21 | 35.25 | 34.78 | 42.60 | 46.86 |
| 1999 | 57.75 | 31.85 | 16.68 | 36.33 | 42.98 | 54.93 | 20.45 | 14.82 | 34.81 | 35.07 | 43.39 | 46.27 |
| 2000 | 56.19 | 31.98 | 16.52 | 35.66 | 43.00 | 55.32 | 20.18 | 14.42 | 34.88 | 35.42 | 43.74 | 46.32 |
| 2001 | 54.86 | 32.01 | 16.32 | 35.62 | 43.25 | 54.83 | 19.91 | 14.09 | 34.93 | 35.99 | 45.65 | 46.29 |
| 2002 | 53.15 | 31.88 | 16.23 | 35.45 | 43.45 | 50.93 | 19.65 | 13.76 | 34.93 | 36.69 | 45.88 | 46.07 |
| 2003 | 51.85 | 31.81 | 16.12 | 34.92 | 43.85 | 47.18 | 19.48 | 13.42 | 34.93 | 37.29 | 46.25 | 46.12 |
| 2004 | 50.34 | 31.72 | 15.94 | 34.76 | 44.46 | 46.20 | 19.35 | 13.04 | 34.79 | 37.78 | 46.51 | 46.15 |
| 2005 | 49.23 | 31.61 | 15.74 | 34.15 | 44.96 | 44.69 | 19.09 | 12.66 | 34.54 | 38.35 | 46.71 | 46.06 |
| 2006 | 47.75 | 31.51 | 15.52 | 33.79 | 45.27 | 42.97 | 18.76 | 12.28 | 34.11 | 38.86 | 46.78 | 45.52 |
| 2007 | 46.00 | 31.40 | 15.30 | 33.40 | 45.10 | 42.20 | 18.50 | 11.90 | 33.50 | 39.40 | 46.70 | 44.60 |
| 2008 | 44.36 | 31.29 | 15.08 | 32.35 | 45.03 | 41.62 | 18.31 | 11.53 | 32.84 | 39.83 | 46.56 | 44.39 |
| 2009 |  |  | 14.85 |  |  |  |  |  |  |  |  |  |

**Shadow Economy Estimates 1981-2009**

| Country / Year | Costa Rica | Côte d'Ivoire | Croatia | Cyprus | Czech Republic | Denmark | Dominican Rep. | Ecuador | Egypt | El Salvador | Equatorial Guinea | Eritrea |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 | 28.48 | 39.03 | | 30.56 | | 20.84 | 39.19 | 29.85 | 39.95 | 47.98 | | |
| 1982 | 28.50 | 38.75 | | 30.27 | | 20.91 | 38.82 | 29.61 | 38.64 | 47.90 | | |
| 1983 | 28.71 | 39.07 | | 29.95 | | 20.92 | 38.77 | 29.16 | 37.65 | 48.10 | | |
| 1984 | 28.65 | 39.55 | | 29.70 | | 20.89 | 38.66 | 29.26 | 37.00 | 48.46 | | |
| 1985 | 28.76 | 40.40 | | 29.29 | | 20.79 | 38.48 | 29.39 | 36.42 | 48.79 | | |
| 1986 | 28.65 | 40.88 | | 28.99 | | 20.70 | 38.39 | 29.43 | 36.09 | 49.21 | | |
| 1987 | 28.67 | 41.30 | | 28.70 | | 20.39 | 38.34 | 29.42 | 35.78 | 49.42 | | |
| 1988 | 28.35 | 41.86 | | 28.41 | | 20.21 | 37.96 | 29.49 | 36.09 | 49.69 | | |
| 1989 | 28.14 | 42.75 | | 28.19 | | 20.04 | 37.53 | 29.62 | 36.35 | 49.73 | | |
| 1990 | 27.95 | 44.12 | 32.67 | 27.80 | 18.13 | 19.89 | 37.04 | 29.68 | 36.62 | 49.44 | | |
| 1991 | 27.65 | 45.23 | 33.03 | 28.02 | 18.09 | 19.73 | 36.84 | 29.94 | 36.62 | 49.71 | | |
| 1992 | 27.54 | 45.69 | 33.25 | 27.83 | 18.21 | 19.62 | 36.80 | 29.95 | 36.85 | 49.77 | | 46.97 |
| 1993 | 27.36 | 46.38 | 33.61 | 27.62 | 18.32 | 19.46 | 36.54 | 30.01 | 36.93 | 49.54 | | 47.26 |
| 1994 | 27.09 | 46.58 | 33.80 | 27.51 | 18.43 | 19.29 | 36.17 | 30.16 | 36.88 | 49.17 | | 46.55 |
| 1995 | 26.90 | 46.32 | 33.99 | 27.36 | 18.45 | 19.21 | 35.74 | 30.17 | 36.80 | 48.39 | | 44.67 |
| 1996 | 26.57 | 46.07 | 34.13 | 27.24 | 18.35 | 19.04 | 35.40 | 30.24 | 36.67 | 47.36 | 74.45 | 45.20 |
| 1997 | 26.77 | 46.14 | 33.99 | 27.08 | 18.17 | 18.92 | 34.99 | 30.39 | 36.50 | 47.10 | 61.31 | 45.08 |
| 1998 | 26.68 | 45.98 | 33.49 | 27.05 | 18.08 | 18.66 | 34.45 | 30.48 | 36.19 | 47.03 | 52.77 | 42.39 |
| 1999 | 26.23 | 45.74 | 33.14 | 26.97 | 18.00 | 18.41 | 33.47 | 30.32 | 35.87 | 46.39 | 47.48 | 40.71 |
| 2000 | 25.95 | 46.27 | 32.99 | 27.04 | 17.92 | 18.21 | 32.77 | 30.76 | 35.52 | 45.85 | 43.43 | 38.93 |
| 2001 | 26.02 | 47.05 | 32.96 | 27.03 | 17.82 | 17.96 | 32.02 | 31.11 | 35.29 | 45.30 | 40.08 | 39.73 |
| 2002 | 25.63 | 46.75 | 32.75 | 26.99 | 17.67 | 17.75 | 31.47 | 31.08 | 35.03 | 44.73 | 36.46 | 39.43 |
| 2003 | 25.23 | 47.05 | 32.39 | 26.95 | 17.49 | 17.57 | 31.01 | 30.83 | 34.78 | 44.55 | 35.54 | 38.80 |
| 2004 | 24.87 | 47.23 | 32.04 | 27.01 | 17.41 | 17.46 | 30.95 | 30.84 | 34.51 | 43.93 | 33.45 | 39.30 |
| 2005 | 24.70 | 47.14 | 31.57 | 26.79 | 17.28 | 17.31 | 30.92 | 30.75 | 34.18 | 43.71 | 31.96 | 39.51 |
| 2006 | 24.36 | 47.02 | 30.96 | 26.63 | 17.17 | 17.15 | 30.80 | 30.57 | 33.79 | 43.45 | 31.14 | 40.47 |
| 2007 | 24.00 | 47.00 | 30.40 | 26.50 | 17.00 | 16.90 | 30.50 | 30.40 | 33.10 | 43.00 | 30.10 | 41.40 |
| 2008 | 23.67 | 46.93 | 29.77 | 26.19 | 16.79 | 16.70 | 30.11 | 30.18 | 32.36 | 42.71 | 28.80 | 42.32 |
| 2009 | | | | | 16.63 | 16.47 | | | | | | |

**Shadow Economy Estimates 1981-2009**

| Year | Estonia | Ethiopia | Fiji | Finland | France | Gabon | Gambia | Georgia | Germany | Ghana | Greece | Guatemala |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 | | 39.15 | 35.25 | 19.63 | 16.52 | 48.78 | 58.39 | | 16.98 | 35.46 | 28.86 | 53.19 |
| 1982 | | 39.09 | 34.49 | 19.52 | 16.46 | 47.96 | 58.24 | | 16.96 | 35.98 | 28.81 | 52.65 |
| 1983 | | 38.77 | 34.27 | 19.36 | 16.39 | 47.54 | 58.62 | | 16.96 | 36.77 | 28.89 | 52.64 |
| 1984 | | 38.51 | 34.31 | 19.22 | 16.37 | 47.14 | 58.66 | | 16.92 | 37.72 | 28.92 | 52.86 |
| 1985 | | 37.99 | 34.49 | 19.09 | 16.33 | 47.20 | 58.88 | | 16.90 | 38.15 | 28.97 | 53.07 |
| 1986 | | 37.77 | 34.55 | 18.94 | 16.35 | 46.48 | 59.47 | | 16.87 | 38.39 | 28.93 | 53.57 |
| 1987 | | 37.45 | 34.51 | 18.79 | 16.34 | 46.15 | 59.71 | | 16.82 | 38.79 | 28.78 | 54.14 |
| 1988 | | 37.18 | 34.84 | 18.66 | 16.30 | 46.57 | 59.67 | | 16.78 | 39.30 | 29.02 | 54.36 |
| 1989 | | 36.58 | 35.32 | 18.52 | 16.25 | 46.48 | 57.87 | | 16.72 | 39.60 | 28.98 | 54.48 |
| 1990 | 34.04 | 36.08 | 35.73 | 18.20 | 16.12 | 46.74 | 56.00 | | 16.69 | 39.70 | 29.00 | 54.60 |
| 1991 | 33.48 | 36.23 | 34.99 | 17.92 | 16.07 | 47.08 | 54.99 | | 16.58 | 39.74 | 28.85 | 54.75 |
| 1992 | 33.09 | 36.63 | 34.59 | 17.82 | 15.97 | 47.08 | 53.82 | | 16.38 | 39.36 | 28.84 | 54.43 |
| 1993 | 32.85 | 36.91 | 34.54 | 17.85 | 15.73 | 47.38 | 52.22 | 79.69 | 16.20 | 39.44 | 28.85 | 53.70 |
| 1994 | 32.83 | 36.94 | 34.20 | 17.95 | 15.92 | 47.67 | 50.99 | 80.33 | 16.08 | 39.66 | 28.92 | 53.31 |
| 1995 | 32.80 | 36.91 | 34.06 | 18.05 | 15.91 | 47.98 | 50.30 | 79.44 | 15.94 | 39.66 | 28.94 | 52.97 |
| 1996 | 33.00 | 36.84 | 33.85 | 18.06 | 15.89 | 48.23 | 49.22 | 79.06 | 15.82 | 39.78 | 28.97 | 52.75 |
| 1997 | 33.12 | 36.85 | 33.80 | 18.08 | 15.85 | 48.52 | 48.43 | 78.42 | 15.75 | 39.61 | 28.82 | 52.76 |
| 1998 | 32.89 | 36.88 | 33.85 | 18.07 | 15.88 | 47.57 | 48.16 | 77.16 | 15.69 | 39.24 | 28.94 | 52.45 |
| 1999 | 32.62 | 36.81 | 33.28 | 18.01 | 15.83 | 46.35 | 47.97 | 75.42 | 15.55 | 39.05 | 28.79 | 51.63 |
| 2000 | 32.63 | 36.80 | 32.90 | 17.96 | 15.61 | 46.74 | 47.79 | 73.75 | 15.44 | 38.87 | 28.50 | 50.97 |
| 2001 | 32.47 | 36.87 | 32.92 | 17.84 | 15.51 | 46.74 | 47.27 | 72.60 | 15.34 | 39.00 | 28.13 | 50.34 |
| 2002 | 32.11 | 36.69 | 33.06 | 17.69 | 15.40 | 46.78 | 46.67 | 70.82 | 15.27 | 38.97 | 27.90 | 49.77 |
| 2003 | 31.90 | 36.32 | 32.95 | 17.56 | 15.28 | 46.89 | 46.43 | 69.85 | 15.24 | 39.08 | 27.72 | 49.13 |
| 2004 | 31.36 | 36.57 | 32.68 | 17.43 | 15.26 | 47.04 | 46.10 | 67.90 | 15.26 | 38.85 | 27.39 | 48.65 |
| 2005 | 30.79 | 36.28 | 32.57 | 17.33 | 15.18 | 47.16 | 45.04 | 65.91 | 15.31 | 39.34 | 26.92 | 48.46 |
| 2006 | 30.36 | 35.77 | 32.51 | 17.15 | 15.07 | 47.28 | 42.79 | 64.40 | 15.33 | 38.93 | 26.76 | 48.35 |
| 2007 | 29.50 | 35.10 | 32.60 | 17.00 | 14.70 | 47.30 | 40.90 | 62.10 | 15.30 | 38.30 | 26.50 | 47.90 |
| 2008 | 28.70 | 34.26 | 32.86 | 16.79 | 14.63 | 47.37 | 39.26 | 59.93 | 15.23 | 37.42 | 26.16 | 47.39 |
| 2009 | | | | 16.53 | 14.26 | | | | 15.14 | | 25.85 | |

**Shadow Economy Estimates 1981-2009**

| Year | Guinea | Guinea-Bissau | Guyana | Haiti | Honduras | Hong Kong | Hungary | Iceland | India | Indonesia | Iran | Ireland |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 | 49.54 | 43.62 | 30.74 | 58.67 | 53.51 | 21.84 | 28.25 | 17.74 | 30.25 | 24.82 | 17.33 | 19.62 |
| 1982 | 49.40 | 43.64 | 30.64 | 57.54 | 53.50 | 21.09 | 28.03 | 17.59 | 29.86 | 24.04 | 17.54 | 19.33 |
| 1983 | 49.30 | 43.47 | 30.78 | 56.80 | 54.01 | 20.56 | 27.85 | 17.34 | 29.58 | 23.31 | 17.57 | 19.11 |
| 1984 | 49.43 | 43.31 | 31.24 | 56.05 | 54.38 | 20.23 | 27.75 | 17.37 | 29.37 | 22.71 | 17.57 | 18.94 |
| 1985 | 49.71 | 43.43 | 31.57 | 55.30 | 54.58 | 19.77 | 27.66 | 17.31 | 29.13 | 22.17 | 17.66 | 18.81 |
| 1986 | 49.76 | 43.30 | 31.75 | 54.55 | 54.59 | 19.56 | 27.60 | 17.27 | 28.77 | 21.94 | 17.89 | 18.71 |
| 1987 | 49.41 | 43.45 | 32.12 | 54.09 | 55.01 | 19.29 | 27.51 | 17.38 | 28.46 | 21.48 | 18.00 | 18.68 |
| 1988 | 48.95 | 43.31 | 32.38 | 53.72 | 54.93 | 18.92 | 27.28 | 17.13 | 28.17 | 21.12 | 18.03 | 18.65 |
| 1989 | 48.35 | 42.83 | 32.92 | 53.66 | 54.53 | 18.45 | 27.20 | 16.91 | 27.76 | 20.79 | 18.16 | 18.58 |
| 1990 | 47.99 | 42.57 | 33.17 | 53.50 | 54.36 | 18.15 | 27.10 | 16.81 | 27.39 | 20.47 | 18.25 | 18.53 |
| 1991 | 47.11 | 42.35 | 33.92 | 54.32 | 54.13 | 17.86 | 27.01 | 17.00 | 26.96 | 20.12 | 18.25 | 18.36 |
| 1992 | 46.37 | 42.57 | 33.63 | 54.28 | 53.65 | 17.50 | 27.15 | 16.90 | 26.72 | 19.76 | 18.06 | 18.25 |
| 1993 | 45.70 | 40.39 | 33.53 | 55.00 | 53.07 | 17.16 | 27.13 | 16.87 | 26.41 | 19.44 | 17.89 | 18.27 |
| 1994 | 45.08 | 39.79 | 33.18 | 55.67 | 51.92 | 16.96 | 27.07 | 16.91 | 26.19 | 19.13 | 17.95 | 18.29 |
| 1995 | 44.57 | 39.67 | 33.33 | 56.47 | 51.01 | 16.68 | 26.94 | 16.98 | 25.81 | 18.79 | 18.11 | 18.26 |
| 1996 | 44.07 | 39.63 | 33.23 | 56.52 | 50.30 | 16.32 | 26.81 | 16.98 | 25.33 | 18.42 | 18.20 | 18.15 |
| 1997 | 43.41 | 39.35 | 33.01 | 56.71 | 49.82 | 16.04 | 26.58 | 16.91 | 24.99 | 18.05 | 18.20 | 17.92 |
| 1998 | 42.89 | 39.31 | 33.09 | 56.92 | 49.13 | 15.64 | 26.34 | 16.93 | 24.61 | 17.66 | 18.19 | 17.73 |
| 1999 | 42.62 | 39.38 | 33.23 | 57.02 | 48.50 | 15.37 | 26.05 | 16.70 | 24.26 | 17.81 | 18.21 | 17.45 |
| 2000 | 42.26 | 39.22 | 33.10 | 57.03 | 47.74 | 15.33 | 25.68 | 16.56 | 23.83 | 17.90 | 18.16 | 17.11 |
| 2001 | 41.84 | 39.64 | 33.65 | 57.00 | 47.15 | 15.17 | 25.21 | 16.32 | 23.53 | 17.96 | 18.11 | 16.74 |
| 2002 | 41.79 | 39.61 | 33.72 | 57.01 | 46.82 | 15.07 | 24.88 | 16.09 | 23.25 | 17.98 | 18.07 | 16.46 |
| 2003 | 41.81 | 40.16 | 33.76 | 57.05 | 46.60 | 14.98 | 24.65 | 16.03 | 22.93 | 18.05 | 18.00 | 16.20 |
| 2004 | 41.40 | 40.53 | 33.95 | 57.07 | 46.34 | 14.89 | 24.36 | 15.91 | 22.53 | 18.07 | 17.86 | 15.98 |
| 2005 | 40.85 | 40.90 | 34.04 | 57.07 | 45.87 | 14.81 | 24.11 | 15.78 | 22.06 | 18.05 | 17.68 | 15.85 |
| 2006 | 39.97 | 41.26 | 34.21 | 57.14 | 45.49 | 14.75 | 23.89 | 15.49 | 21.39 | 17.97 | 17.49 | 15.63 |
| 2007 | 39.20 | 41.60 | 34.00 | 57.10 | 45.10 | 14.70 | 23.70 | 15.00 | 20.70 | 17.90 | 17.30 | 15.40 |
| 2008 | 38.51 | 41.44 | 33.88 | 57.05 | 44.44 | 14.55 | 23.51 | 14.60 | 20.00 | 17.82 | 16.95 | 15.12 |
| 2009 | | | | | | | 23.31 | 14.34 | | | | 14.94 |

## Shadow Economy Estimates 1981-2009

| Country / Year | Israel | Italy | Jamaica | Japan | Jordan | Kaza-khstan | Kenya | Korea Republic | Kuwait | Kyrgyzs-tan | Laos | Latvia |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 | 24.06 | 32.25 | 37.52 | 12.74 | 18.97 |  | 30.53 | 44.88 |  |  | 47.59 |  |
| 1982 | 24.10 | 31.98 | 37.76 | 12.58 | 18.02 |  | 30.35 | 44.02 |  |  | 47.67 |  |
| 1983 | 24.03 | 31.80 | 37.85 | 12.46 | 17.54 |  | 30.41 | 43.06 |  |  | 47.51 |  |
| 1984 | 23.85 | 31.73 | 37.92 | 12.35 | 17.22 |  | 30.65 | 41.89 |  |  | 47.69 |  |
| 1985 | 23.71 | 31.54 | 37.85 | 12.26 | 16.86 |  | 30.79 | 40.95 |  |  | 48.58 |  |
| 1986 | 23.91 | 31.38 | 37.76 | 12.14 | 16.92 |  | 30.82 | 40.12 | 17.10 |  | 48.09 |  |
| 1987 | 23.78 | 31.17 | 37.95 | 12.02 | 16.93 |  | 30.96 | 39.43 | 16.95 |  | 47.79 |  |
| 1988 | 23.84 | 30.93 | 37.85 | 11.91 | 16.82 |  | 30.98 | 38.43 | 16.73 |  | 46.88 |  |
| 1989 | 23.90 | 30.63 | 37.64 | 11.76 | 16.79 |  | 30.94 | 37.45 | 16.72 |  | 45.92 |  |
| 1990 | 23.89 | 30.39 | 37.22 | 11.60 | 17.19 |  | 30.86 | 36.34 | 16.51 |  | 46.50 |  |
| 1991 | 23.92 | 30.07 | 36.89 | 11.43 | 17.39 |  | 30.87 | 35.18 | 15.09 |  | 47.62 |  |
| 1992 | 23.59 | 29.72 | 36.77 | 11.26 | 17.90 |  | 31.00 | 33.84 | 17.35 |  | 47.16 |  |
| 1993 | 23.29 | 29.21 | 36.14 | 11.11 | 18.02 | 43.78 | 31.22 | 32.80 | 18.41 | 39.48 | 46.38 | 35.17 |
| 1994 | 23.05 | 29.08 | 35.66 | 11.00 | 17.89 | 43.06 | 31.33 | 32.04 | 18.35 | 39.64 | 45.71 | 35.07 |
| 1995 | 22.75 | 28.98 | 35.21 | 10.90 | 17.71 | 42.05 | 31.39 | 31.15 | 18.43 | 39.61 | 44.82 | 34.85 |
| 1996 | 22.37 | 28.80 | 34.78 | 10.82 | 17.60 | 42.11 | 31.37 | 30.28 | 18.79 | 39.33 | 43.67 | 34.77 |
| 1997 | 21.94 | 28.67 | 34.41 | 10.74 | 17.42 | 42.38 | 31.31 | 29.36 | 18.84 | 39.19 | 43.58 | 34.65 |
| 1998 | 21.65 | 28.54 | 34.08 | 10.64 | 17.28 | 42.59 | 31.18 | 28.42 | 18.99 | 39.23 | 42.13 | 34.26 |
| 1999 | 21.45 | 28.38 | 34.03 | 10.57 | 17.38 | 42.75 | 30.94 | 28.35 | 19.00 | 39.29 | 39.25 | 33.48 |
| 2000 | 21.27 | 28.19 | 33.96 | 10.53 | 17.29 | 42.84 | 30.80 | 28.09 | 19.08 | 39.09 | 37.26 | 32.78 |
| 2001 | 21.01 | 27.96 | 33.84 | 10.47 | 17.28 | 42.82 | 30.59 | 27.64 | 19.23 | 38.93 | 36.03 | 32.27 |
| 2002 | 20.77 | 27.75 | 33.56 | 10.41 | 17.32 | 42.54 | 30.35 | 27.33 | 19.24 | 38.84 | 34.46 | 31.66 |
| 2003 | 20.73 | 27.53 | 33.30 | 10.39 | 17.37 | 42.13 | 30.34 | 26.89 | 19.20 | 39.10 | 32.66 | 30.80 |
| 2004 | 20.78 | 27.36 | 33.13 | 10.37 | 17.43 | 41.58 | 30.26 | 26.57 | 19.02 | 39.30 | 31.12 | 29.92 |
| 2005 | 20.79 | 27.13 | 32.92 | 10.35 | 17.27 | 40.90 | 30.15 | 26.25 | 18.66 | 39.51 | 29.84 | 28.90 |
| 2006 | 20.74 | 27.00 | 32.77 | 10.33 | 17.24 | 39.84 | 29.92 | 25.92 | 18.26 | 39.37 | 28.58 | 28.11 |
| 2007 | 20.70 | 26.80 | 32.50 | 10.30 | 17.20 | 38.40 | 29.50 | 25.60 | 17.80 | 38.80 | 28.00 | 27.20 |
| 2008 | 20.68 | 26.65 | 32.30 | 10.26 | 17.13 | 37.01 | 28.95 | 25.26 | 17.04 | 38.18 | 26.48 | 26.36 |
| 2009 |  | 26.43 |  | 10.22 |  |  |  | 24.90 |  |  |  |  |

**Shadow Economy Estimates 1981-2009**

| Year / Country | Lebanon | Lesotho | Liberia | Libya | Lithuania | Luxembourg | Macao | Macedonia | Madagascar | Malawi | Malaysia |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 | 30.04 | 42.14 | 27.68 | | | 11.41 | 14.85 | | 36.69 | 35.09 | 45.13 |
| 1982 | 29.43 | 41.30 | 27.68 | | | 11.36 | 14.68 | | 36.96 | 35.16 | 43.66 |
| 1983 | 29.58 | 40.80 | 27.80 | | | 11.30 | 14.60 | | 37.37 | 35.25 | 42.20 |
| 1984 | 29.64 | 40.70 | 28.00 | | | 11.29 | 14.39 | | 37.76 | 35.23 | 30.97 |
| 1985 | 30.07 | 40.29 | 28.30 | | | 11.27 | 14.18 | | 38.10 | 35.04 | 39.78 |
| 1986 | 29.68 | 39.72 | 28.61 | 27.68 | | 11.30 | 13.98 | | 38.71 | 34.77 | 39.29 |
| 1987 | 28.94 | 39.56 | 29.13 | 27.20 | | 11.25 | 13.78 | | 39.11 | 35.16 | 39.11 |
| 1988 | 27.95 | 39.41 | 29.64 | 27.27 | | 11.17 | 13.55 | | 39.39 | 35.87 | 39.07 |
| 1989 | 27.79 | 38.72 | 30.12 | 27.48 | | 11.04 | 13.26 | | 39.38 | 36.42 | 38.86 |
| 1990 | 27.79 | 37.57 | 29.83 | 27.58 | | 10.93 | 13.03 | 34.48 | 39.32 | 36.60 | 38.45 |
| 1991 | 28.69 | 36.14 | 29.79 | 27.69 | | 10.82 | 12.83 | 34.47 | 39.23 | 37.40 | 37.97 |
| 1992 | 30.02 | 34.60 | 30.61 | 28.14 | | 10.64 | 12.57 | 34.65 | 39.75 | 37.11 | 36.91 |
| 1993 | 30.42 | 33.51 | 31.54 | 28.63 | 36.33 | 10.54 | 12.09 | 34.97 | 40.00 | 37.00 | 36.08 |
| 1994 | 30.43 | 32.68 | 32.26 | 28.85 | 36.30 | 10.45 | 11.69 | 35.19 | 40.23 | 36.37 | 35.06 |
| 1995 | 30.42 | 31.98 | 33.06 | 29.10 | 36.38 | 10.36 | 11.43 | 35.36 | 40.54 | 36.74 | 34.00 |
| 1996 | 30.10 | 31.37 | 34.02 | 29.41 | 36.35 | 10.32 | 11.50 | 35.31 | 40.84 | 37.07 | 32.82 |
| 1997 | 29.98 | 30.72 | 35.38 | 29.76 | 36.09 | 10.27 | 11.39 | 35.28 | 40.96 | 37.42 | 31.85 |
| 1998 | 29.95 | 30.13 | 36.86 | 29.96 | 35.51 | 10.22 | 11.31 | 35.15 | 41.06 | 37.77 | 30.70 |
| 1999 | 30.04 | 29.79 | 37.99 | 30.45 | 34.95 | 10.14 | 11.28 | 35.06 | 41.01 | 38.12 | 30.61 |
| 2000 | 30.36 | 29.48 | 38.63 | 30.91 | 34.44 | 10.05 | 11.28 | 35.10 | 40.94 | 38.47 | 30.80 |
| 2001 | 30.68 | 29.27 | 39.49 | 30.86 | 33.99 | 9.96 | 11.44 | 34.86 | 40.62 | 38.72 | 30.50 |
| 2002 | 30.98 | 29.11 | 40.47 | 31.14 | 33.49 | 9.84 | 11.52 | 34.97 | 40.34 | 38.61 | 30.38 |
| 2003 | 31.22 | 28.95 | 41.53 | 31.21 | 33.17 | 9.74 | 11.58 | 35.06 | 40.40 | 38.89 | 30.20 |
| 2004 | 31.43 | 28.84 | 42.09 | 31.28 | 32.10 | 9.65 | 11.67 | 34.80 | 40.16 | 39.04 | 30.10 |
| 2005 | 31.64 | 28.55 | 42.69 | 31.27 | 31.12 | 9.57 | 11.63 | 34.89 | 39.61 | 39.47 | 29.90 |
| 2006 | 31.70 | 28.74 | 43.47 | 31.08 | 30.38 | 9.47 | 11.45 | 34.97 | 39.20 | 39.42 | 29.80 |
| 2007 | 32.00 | 28.80 | 44.20 | 30.90 | 29.70 | 9.40 | 11.10 | 34.90 | 38.50 | 39.40 | 29.60 |
| 2008 | 32.36 | 28.71 | 43.95 | 30.69 | 28.82 | 9.13 | 10.65 | 34.49 | 37.47 | 39.69 | 29.34 |
| 2009 | | | | | | 9.96 | | | | | |

**Shadow Economy Estimates 1981-2009**

| Country / Year | Maldives | Mali | Malta | Mauritania | Mauritius | Mexico | Moldova | Mongolia | Morocco | Mozambique | Namibia |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 | 48.39 | 48.62 | 35.85 | 31.91 | 28.53 | 31.38 |  | 16.23 | 39.57 | 43.05 | 28.19 |
| 1982 | 47.38 | 47.78 | 34.92 | 31.46 | 28.39 | 30.63 |  | 15.79 | 39.03 | 42.82 | 27.74 |
| 1983 | 46.66 | 47.42 | 33.61 | 31.08 | 28.52 | 30.33 |  | 15.41 | 38.52 | 42.58 | 27.78 |
| 1984 | 45.77 | 47.47 | 32.85 | 30.70 | 28.71 | 30.44 |  | 15.15 | 38.37 | 43.35 | 27.96 |
| 1985 | 44.56 | 47.07 | 32.18 | 30.62 | 28.75 | 30.51 |  | 15.01 | 38.16 | 43.87 | 28.14 |
| 1986 | 43.44 | 46.91 | 31.72 | 30.93 | 28.75 | 30.46 |  | 14.82 | 37.85 | 44.64 | 28.63 |
| 1987 | 42.37 | 46.19 | 31.44 | 31.16 | 28.57 | 30.65 |  | 14.59 | 37.70 | 45.03 | 29.58 |
| 1988 | 41.38 | 45.72 | 31.16 | 31.38 | 28.18 | 30.78 |  | 14.47 | 37.62 | 45.19 | 30.10 |
| 1989 | 40.42 | 45.05 | 30.66 | 31.78 | 27.57 | 30.84 |  | 14.35 | 37.62 | 45.03 | 30.55 |
| 1990 | 39.51 | 44.48 | 30.26 | 31.89 | 27.16 | 30.88 |  | 14.15 | 37.41 | 44.94 | 31.07 |
| 1991 | 38.61 | 43.89 | 29.62 | 32.17 | 26.56 | 32.09 |  | 14.65 | 36.81 | 44.83 | 30.31 |
| 1992 | 37.73 | 43.76 | 29.06 | 32.28 | 26.21 | 32.00 | 44.25 | 14.89 | 36.61 | 44.73 | 30.58 |
| 1993 | 36.89 | 43.06 | 28.86 | 33.20 | 25.81 | 31.80 | 43.36 | 15.12 | 36.40 | 44.77 | 30.37 |
| 1994 | 36.04 | 42.74 | 28.47 | 33.73 | 25.43 | 31.67 | 42.87 | 15.26 | 36.32 | 44.61 | 30.83 |
| 1995 | 35.39 | 42.23 | 28.13 | 34.32 | 25.00 | 31.42 | 43.11 | 15.45 | 36.36 | 44.92 | 30.79 |
| 1996 | 35.15 | 41.80 | 27.74 | 34.85 | 24.80 | 31.59 | 43.57 | 15.79 | 36.32 | 44.54 | 30.87 |
| 1997 | 34.44 | 41.59 | 27.39 | 35.04 | 24.67 | 31.68 | 43.80 | 16.02 | 36.33 | 44.35 | 30.68 |
| 1998 | 33.74 | 41.38 | 27.03 | 35.44 | 24.26 | 31.43 | 44.24 | 16.13 | 36.23 | 44.02 | 30.83 |
| 1999 | 33.10 | 41.13 | 26.78 | 35.33 | 23.87 | 30.97 | 44.87 | 16.28 | 35.98 | 43.32 | 30.60 |
| 2000 | 32.57 | 41.50 | 26.58 | 35.44 | 23.50 | 30.67 | 45.35 | 16.43 | 35.64 | 41.69 | 30.50 |
| 2001 | 32.40 | 41.83 | 26.35 | 35.74 | 23.06 | 30.19 | 45.65 | 16.54 | 35.18 | 40.69 | 30.53 |
| 2002 | 32.24 | 41.50 | 26.40 | 35.06 | 22.92 | 29.96 | 45.76 | 16.75 | 34.89 | 40.14 | 30.23 |
| 2003 | 32.36 | 41.38 | 26.56 | 34.61 | 22.62 | 29.69 | 45.76 | 17.03 | 34.84 | 39.55 | 30.04 |
| 2004 | 31.86 | 40.80 | 26.55 | 34.88 | 22.32 | 29.68 | 45.61 | 17.19 | 34.51 | 39.18 | 29.41 |
| 2005 | 30.84 | 40.82 | 26.71 | 33.11 | 22.03 | 29.44 | 45.20 | 17.20 | 33.92 | 38.99 | 29.08 |
| 2006 | 29.47 | 40.37 | 26.60 | 31.44 | 21.97 | 29.16 | 44.98 | 16.89 | 33.51 | 38.69 | 28.92 |
| 2007 | 28.60 | 39.90 | 26.50 | 31.10 | 21.90 | 28.80 | 44.50 | 16.40 | 33.10 | 38.40 | 28.50 |
| 2008 | 27.62 | 39.41 | 26.32 | 31.39 | 21.85 | 28.49 | 43.94 | 15.81 | 32.58 | 38.13 | 28.02 |
| 2009 |  |  |  |  |  | 28.109 |  |  |  |  |  |

**Shadow Economy Estimates 1981-2009**

| Year | Nepal | Nether-lands | New Zealand | Nicaragua | Niger | Nigeria | Norway | Oman | Pakistan | Panama | Papua New Guinea |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 | 52.05 | 14.50 | 13.69 | 41.19 | 36.07 | 45.43 | 20.57 | 24.05 | 39.17 | 67.27 | 42.01 |
| 1982 | 51.11 | 14.50 | 13.66 | 40.48 | 35.80 | 44.46 | 20.45 | 23.33 | 38.70 | 66.45 | 41.32 |
| 1983 | 50.34 | 14.47 | 13.59 | 39.99 | 35.62 | 44.16 | 20.31 | 22.53 | 38.07 | 65.77 | 40.58 |
| 1984 | 49.59 | 14.46 | 13.52 | 39.49 | 36.05 | 44.37 | 20.26 | 21.87 | 37.59 | 66.34 | 39.96 |
| 1985 | 48.90 | 14.41 | 13.43 | 39.08 | 36.86 | 45.07 | 20.15 | 21.38 | 37.04 | 67.17 | 39.64 |
| 1986 | 47.85 | 14.35 | 13.88 | 38.92 | 37.21 | 45.70 | 20.12 | 20.62 | 36.55 | 67.42 | 39.81 |
| 1987 | 47.23 | 14.52 | 13.79 | 38.77 | 37.55 | 46.36 | 19.93 | 20.12 | 36.17 | 67.57 | 39.87 |
| 1988 | 46.57 | 14.50 | 13.68 | 39.50 | 37.60 | 47.25 | 19.75 | 20.14 | 35.74 | 68.04 | 39.82 |
| 1989 | 45.93 | 14.43 | 13.57 | 40.21 | 36.18 | 48.24 | 19.57 | 20.27 | 35.41 | 69.69 | 39.36 |
| 1990 | 45.20 | 14.36 | 13.50 | 40.56 | 35.75 | 49.04 | 19.47 | 20.43 | 35.08 | 71.32 | 39.41 |
| 1991 | 44.82 | 14.28 | 13.41 | 41.99 | 36.27 | 49.57 | 19.40 | 20.70 | 35.06 | 71.16 | 39.39 |
| 1992 | 44.25 | 14.20 | 13.43 | 42.60 | 36.46 | 50.09 | 19.41 | 20.85 | 34.53 | 71.14 | 39.07 |
| 1993 | 43.66 | 14.06 | 13.45 | 43.03 | 37.07 | 50.65 | 19.43 | 20.94 | 34.11 | 70.23 | 39.12 |
| 1994 | 43.00 | 14.03 | 13.44 | 43.64 | 37.55 | 51.06 | 19.46 | 20.85 | 33.85 | 69.01 | 39.52 |
| 1995 | 42.34 | 14.02 | 13.37 | 43.96 | 37.98 | 51.56 | 19.48 | 20.90 | 33.42 | 67.82 | 39.48 |
| 1996 | 41.56 | 13.97 | 13.28 | 44.18 | 38.56 | 52.33 | 19.47 | 20.95 | 33.29 | 66.27 | 39.26 |
| 1997 | 40.69 | 13.90 | 13.15 | 44.27 | 38.83 | 52.98 | 19.46 | 21.14 | 33.20 | 64.93 | 38.54 |
| 1998 | 40.02 | 13.79 | 13.02 | 44.09 | 39.17 | 53.51 | 19.32 | 20.69 | 33.19 | 63.82 | 38.42 |
| 1999 | 39.47 | 13.67 | 12.93 | 43.87 | 39.26 | 54.07 | 19.06 | 20.00 | 33.30 | 62.47 | 38.38 |
| 2000 | 39.26 | 13.56 | 12.81 | 43.27 | 39.68 | 54.66 | 18.91 | 19.63 | 33.46 | 61.37 | 38.36 |
| 2001 | 38.71 | 13.43 | 12.73 | 43.07 | 40.17 | 55.01 | 18.74 | 19.46 | 33.57 | 60.62 | 37.92 |
| 2002 | 38.39 | 13.32 | 12.67 | 43.00 | 40.23 | 56.51 | 18.65 | 19.23 | 33.56 | 60.50 | 37.41 |
| 2003 | 38.04 | 13.23 | 12.55 | 43.04 | 39.94 | 57.91 | 18.54 | 19.01 | 33.64 | 60.59 | 37.19 |
| 2004 | 37.46 | 13.18 | 12.42 | 43.13 | 39.73 | 58.83 | 18.48 | 18.66 | 33.72 | 60.53 | 36.98 |
| 2005 | 36.81 | 13.13 | 12.27 | 43.07 | 39.85 | 57.72 | 18.36 | 17.89 | 33.91 | 60.23 | 36.79 |
| 2006 | 36.39 | 13.06 | 12.12 | 43.09 | 39.16 | 56.14 | 18.20 | 17.64 | 33.81 | 59.77 | 36.58 |
| 2007 | 36.00 | 13.00 | 12.00 | 43.10 | 38.50 | 52.80 | 18.00 | 17.30 | 33.60 | 59.40 | 36.50 |
| 2008 | 35.63 | 12.91 | 11.85 | 43.00 | 37.14 | 49.64 | 17.81 | 16.80 | 33.10 | 58.65 | 36.09 |
| 2009 | | 12.79 | 11.75 | | | | 17.51 | | | | |

**Shadow Economy Estimates 1981-2009**

| Country / Year | Paraguay | Peru | Philippines | Poland | Portugal | Quatar | Romania | Russian Federation | Rwanda | Saudi Arabia | Senegal |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 | 41.43 | 54.45 | 41.91 | 31.10 | 30.27 |  | 31.86 |  | 44.12 |  | 54.79 |
| 1982 | 39.96 | 53.69 | 41.29 | 30.75 | 29.69 |  | 31.23 |  | 43.69 |  | 55.02 |
| 1983 | 39.22 | 53.30 | 40.72 | 30.66 | 29.40 |  | 30.68 |  | 42.89 |  | 54.75 |
| 1984 | 38.93 | 53.77 | 40.10 | 30.54 | 29.10 |  | 30.16 |  | 41.98 |  | 54.35 |
| 1985 | 38.64 | 54.29 | 40.15 | 30.41 | 29.05 |  | 29.67 |  | 40.70 |  | 54.20 |
| 1986 | 38.39 | 55.00 | 40.77 | 30.23 | 29.09 | 22.73 | 29.28 |  | 39.71 | 18.44 | 54.37 |
| 1987 | 38.12 | 55.15 | 41.24 | 29.99 | 29.09 | 22.75 | 28.91 |  | 39.27 | 18.40 | 54.07 |
| 1988 | 37.86 | 55.12 | 41.36 | 29.74 | 28.85 | 23.03 | 28.64 |  | 38.51 | 18.56 | 53.77 |
| 1989 | 37.55 | 55.13 | 41.31 | 29.49 | 28.41 | 23.18 | 28.48 |  | 37.96 | 18.46 | 53.36 |
| 1990 | 37.21 | 55.94 | 41.14 | 29.29 | 28.30 | 23.36 | 28.43 | 37.85 | 38.05 | 18.37 | 53.39 |
| 1991 | 36.74 | 56.48 | 40.80 | 29.29 | 27.65 | 23.21 | 28.36 | 36.55 | 38.21 | 18.33 | 53.00 |
| 1992 | 36.35 | 56.86 | 40.84 | 29.43 | 27.11 | 23.23 | 28.54 | 35.45 | 38.25 | 18.33 | 52.87 |
| 1993 | 36.12 | 57.22 | 40.67 | 29.60 | 26.69 | 22.97 | 28.79 | 35.27 | 38.28 | 18.28 | 52.44 |
| 1994 | 35.91 | 57.41 | 40.49 | 29.74 | 26.52 | 23.01 | 29.03 | 35.41 | 36.74 | 18.08 | 51.38 |
| 1995 | 35.72 | 57.10 | 40.38 | 29.78 | 26.18 | 22.80 | 29.35 | 35.70 | 37.22 | 18.09 | 51.47 |
| 1996 | 35.54 | 56.39 | 40.15 | 29.69 | 25.87 | 22.16 | 29.65 | 36.03 | 38.94 | 18.02 | 51.22 |
| 1997 | 35.39 | 55.96 | 39.81 | 29.46 | 25.63 | 21.59 | 29.97 | 36.55 | 40.49 | 18.01 | 50.67 |
| 1998 | 35.26 | 55.33 | 39.43 | 29.07 | 25.48 | 20.84 | 30.20 | 37.11 | 41.08 | 18.07 | 49.66 |
| 1999 | 35.42 | 54.78 | 39.26 | 28.57 | 25.05 | 20.50 | 30.55 | 37.79 | 41.27 | 18.07 | 48.77 |
| 2000 | 35.46 | 54.52 | 39.09 | 28.13 | 24.63 | 20.61 | 30.83 | 38.53 | 41.53 | 17.67 | 47.59 |
| 2001 | 35.74 | 54.46 | 38.99 | 27.68 | 24.27 | 20.52 | 31.00 | 39.09 | 41.46 | 17.57 | 46.37 |
| 2002 | 35.93 | 54.55 | 38.85 | 27.37 | 23.91 | 20.08 | 30.67 | 39.55 | 41.34 | 17.56 | 45.27 |
| 2003 | 36.25 | 54.59 | 38.77 | 27.12 | 23.63 | 19.91 | 30.65 | 39.95 | 41.14 | 17.54 | 44.80 |
| 2004 | 36.51 | 54.56 | 38.68 | 26.97 | 23.45 | 19.05 | 30.76 | 40.25 | 40.87 | 17.39 | 43.93 |
| 2005 | 36.75 | 54.43 | 38.42 | 26.72 | 23.30 | 18.40 | 30.53 | 40.48 | 40.51 | 17.27 | 43.23 |
| 2006 | 36.95 | 54.26 | 38.34 | 26.39 | 23.14 | 17.14 | 30.55 | 40.62 | 39.82 | 17.03 | 42.34 |
| 2007 | 37.10 | 53.70 | 38.30 | 26.00 | 23.00 | 16.74 | 30.20 | 40.60 | 39.00 | 16.80 | 41.70 |
| 2008 | 37.19 | 52.76 | 38.17 | 25.50 | 22.84 | 16.11 | 29.60 | 40.25 | 37.97 | 16.61 | 40.85 |
| 2009 |  |  |  | 25.96 | 22.62 |  |  |  |  |  |  |

**Shadow Economy Estimates 1981-2009**

| Year | Sierra Leone | Singapore | Slovakia | Slovenia | Solomon Islands | South Africa | Spain | Sri Lanka | Sudan | Suriname | Swaziland |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 | 39.92 | 17.31 | | | 34.01 | 25.54 | 27.25 | 52.25 | 33.98 | 41.76 | 44.38 |
| 1982 | 39.66 | 17.03 | | | 33.40 | 25.05 | 27.16 | 51.44 | 33.39 | 41.98 | 43.61 |
| 1983 | 39.42 | 16.59 | | | 32.75 | 25.03 | 27.12 | 50.78 | 33.28 | 42.80 | 42.97 |
| 1984 | 39.30 | 16.16 | | | 32.81 | 24.93 | 27.07 | 50.16 | 33.41 | 43.50 | 42.57 |
| 1985 | 39.45 | 15.54 | | | 32.36 | 24.84 | 26.98 | 49.67 | 33.77 | 44.28 | 41.96 |
| 1986 | 39.48 | 15.22 | | | 31.56 | 24.90 | 26.85 | 49.20 | 34.14 | 44.73 | 41.67 |
| 1987 | 39.51 | 15.10 | 19.02 | | 31.23 | 25.07 | 26.79 | 49.01 | 34.34 | 44.82 | 41.90 |
| 1988 | 39.85 | 14.98 | 18.75 | | 31.34 | 25.31 | 26.59 | 48.77 | 34.37 | 45.24 | 42.34 |
| 1989 | 39.58 | 14.96 | 18.48 | | 30.53 | 25.44 | 26.22 | 48.71 | 34.49 | 45.91 | 41.95 |
| 1990 | 39.32 | 14.87 | 18.25 | 27.68 | 30.63 | 25.48 | 25.85 | 48.70 | 34.68 | 46.38 | 41.32 |
| 1991 | 39.22 | 14.68 | 17.76 | 27.76 | 30.93 | 25.68 | 25.48 | 48.58 | 34.85 | 46.39 | 41.13 |
| 1992 | 39.09 | 14.54 | 17.61 | 27.92 | 30.65 | 25.85 | 25.16 | 48.41 | 35.06 | 46.53 | 41.01 |
| 1993 | 38.61 | 14.31 | 17.65 | 28.13 | 30.80 | 26.11 | 24.99 | 48.29 | 35.11 | 46.37 | 40.08 |
| 1994 | 39.40 | 14.04 | 17.74 | 28.79 | 31.39 | 26.40 | 24.87 | 47.95 | 35.31 | 46.13 | 39.53 |
| 1995 | 38.72 | 13.80 | 17.86 | 28.85 | 31.04 | 26.51 | 24.69 | 47.37 | 35.49 | 45.14 | 39.28 |
| 1996 | 39.07 | 13.63 | 17.92 | 28.54 | 31.13 | 26.44 | 24.56 | 47.13 | 35.15 | 45.31 | 39.12 |
| 1997 | 39.21 | 13.37 | 17.80 | 28.40 | 31.26 | 26.39 | 24.42 | 46.82 | 35.31 | 45.04 | 38.72 |
| 1998 | 39.93 | 12.93 | 17.64 | 28.17 | 31.23 | 26.38 | 24.20 | 46.99 | 35.21 | 45.10 | 38.59 |
| 1999 | 40.57 | 12.80 | 17.54 | 27.72 | 31.32 | 26.33 | 23.94 | 46.26 | 34.10 | 44.61 | 38.40 |
| 2000 | 41.48 | 12.66 | 17.51 | 27.17 | 31.57 | 26.30 | 23.77 | 45.57 | 33.68 | 42.95 | 38.60 |
| 2001 | 41.90 | 12.35 | 17.52 | 26.74 | 31.89 | 26.25 | 23.43 | 45.09 | 33.19 | 41.81 | 38.54 |
| 2002 | 47.84 | 12.25 | 17.39 | 26.45 | 32.24 | 26.21 | 23.25 | 44.93 | 31.92 | 40.65 | 38.23 |
| 2003 | 52.45 | 12.16 | 17.30 | 26.01 | 32.39 | 26.13 | 23.08 | 44.70 | 28.94 | 39.45 | 38.20 |
| 2004 | 51.08 | 12.32 | 17.30 | 25.86 | 32.54 | 25.96 | 22.87 | 44.25 | 27.74 | 38.25 | 38.16 |
| 2005 | 48.42 | 12.28 | 17.16 | 25.45 | 32.26 | 25.73 | 22.67 | 43.62 | 26.70 | 37.06 | 37.93 |
| 2006 | 47.46 | 12.26 | 16.98 | 25.08 | 32.46 | 25.50 | 22.45 | 43.11 | 25.17 | 35.86 | 38.20 |
| 2007 | 42.90 | 12.20 | 16.80 | 24.70 | 32.70 | 25.20 | 22.20 | 42.20 | 23.99 | 35.10 | 38.50 |
| 2008 | 39.15 | 12.13 | 16.57 | 24.11 | 31.67 | 24.87 | 22.01 | 41.31 | 22.97 | 34.25 | 38.89 |
| 2009 | | | 16.34 | | | | 21.87 | | | | |

## Shadow Economy Estimates 1981-2009

| Country / Year | Sweden | Switzer-land | Syria | Taiwan | Tajikistan | Tanzania | Thailand | Togo | Trinidad and Tobago | Tunisia | Turkey |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 | 20.11 | 8.91 | 19.99 | 39.29 |  | 65.95 | 70.97 | 26.66 | 33.03 | 38.56 | 41.61 |
| 1982 | 20.11 | 8.86 | 19.55 | 38.24 |  | 65.85 | 70.04 | 26.64 | 32.12 | 37.88 | 41.14 |
| 1983 | 20.11 | 8.83 | 19.19 | 37.72 |  | 65.85 | 69.32 | 26.86 | 31.53 | 37.30 | 40.88 |
| 1984 | 20.11 | 8.82 | 18.84 | 37.18 |  | 66.49 | 68.18 | 27.18 | 31.06 | 37.14 | 40.72 |
| 1985 | 20.06 | 8.79 | 18.65 | 36.54 |  | 67.00 | 67.17 | 27.72 | 30.75 | 36.59 | 40.46 |
| 1986 | 19.91 | 8.77 | 18.46 | 36.33 |  | 67.04 | 66.45 | 27.92 | 30.58 | 36.30 | 40.20 |
| 1987 | 19.83 | 8.73 | 18.43 | 36.01 |  | 66.96 | 65.97 | 28.18 | 30.56 | 36.28 | 39.86 |
| 1988 | 19.74 | 8.70 | 18.64 | 35.19 |  | 66.25 | 65.17 | 28.70 | 30.75 | 36.43 | 38.96 |
| 1989 | 19.62 | 8.66 | 18.76 | 34.23 |  | 65.31 | 63.89 | 28.98 | 31.15 | 36.80 | 38.43 |
| 1990 | 19.43 | 8.62 | 19.05 | 33.22 |  | 64.19 | 62.18 | 28.97 | 31.72 | 37.11 | 37.77 |
| 1991 | 19.18 | 8.63 | 19.24 | 32.45 |  | 62.35 | 59.78 | 28.98 | 31.84 | 37.15 | 37.11 |
| 1992 | 19.03 | 8.55 | 19.46 | 31.74 |  | 61.28 | 57.48 | 29.48 | 32.17 | 37.32 | 36.56 |
| 1993 | 18.90 | 8.51 | 19.51 | 30.85 | 37.58 | 60.51 | 55.46 | 29.76 | 32.26 | 37.18 | 35.54 |
| 1994 | 18.95 | 8.48 | 19.58 | 30.07 | 35.77 | 60.28 | 53.58 | 30.48 | 33.00 | 37.05 | 35.02 |
| 1995 | 18.97 | 8.42 | 19.52 | 29.27 | 35.02 | 60.03 | 52.08 | 31.00 | 33.40 | 37.17 | 34.77 |
| 1996 | 18.91 | 8.37 | 19.41 | 28.50 | 34.68 | 60.14 | 50.50 | 31.40 | 34.03 | 37.28 | 34.20 |
| 1997 | 18.83 | 8.32 | 19.33 | 27.87 | 34.87 | 60.16 | 49.10 | 31.81 | 33.93 | 37.24 | 33.58 |
| 1998 | 18.75 | 8.30 | 19.30 | 27.18 | 35.74 | 60.23 | 48.33 | 32.06 | 33.54 | 37.14 | 33.02 |
| 1999 | 18.68 | 8.24 | 19.27 | 26.55 | 36.30 | 60.10 | 48.62 | 32.27 | 33.17 | 36.99 | 32.53 |
| 2000 | 18.61 | 8.21 | 19.26 | 26.02 | 37.24 | 59.96 | 48.98 | 32.56 | 33.31 | 36.78 | 31.96 |
| 2001 | 18.48 | 8.19 | 19.27 | 25.45 | 38.01 | 59.76 | 49.18 | 32.83 | 33.29 | 36.55 | 31.56 |
| 2002 | 18.35 | 8.17 | 19.22 | 25.33 | 38.75 | 59.30 | 49.32 | 33.20 | 33.06 | 36.19 | 31.61 |
| 2003 | 18.27 | 8.15 | 19.08 | 25.01 | 39.40 | 58.52 | 49.37 | 33.44 | 33.12 | 36.02 | 31.36 |
| 2004 | 18.18 | 8.13 | 18.90 | 24.78 | 39.93 | 57.76 | 49.28 | 33.80 | 33.09 | 35.80 | 31.20 |
| 2005 | 18.15 | 8.11 | 18.74 | 24.45 | 40.42 | 56.39 | 48.98 | 33.99 | 33.18 | 35.55 | 30.82 |
| 2006 | 18.01 | 8.11 | 18.41 | 24.14 | 40.79 | 55.11 | 48.49 | 34.22 | 31.94 | 35.58 | 30.26 |
| 2007 | 17.90 | 8.10 | 18.50 | 23.90 | 41.00 | 53.70 | 48.20 | 34.50 | 31.50 | 35.40 | 29.10 |
| 2008 | 17.65 | 8.08 | 18.40 | 23.65 | 40.97 | 52.52 | 47.90 | 34.71 | 31.27 | 35.27 | 28.63 |
| 2009 | 17.38 | 8.07 |  | 23.51 |  |  |  |  |  |  | 27.68 |

**Shadow Economy Estimates 1981-2009**

| Year \ Country | Uganda | Ukraine | United Arab Emirates | United Kingdom | United States | Uruguay | Venezuela | Vietnam | Yemen | Zambia | Zimbabwe |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1981 | 55.48 | | | 14.80 | 10.70 | 49.72 | 27.27 | 25.66 | | 37.63 | 66.51 |
| 1982 | 55.31 | | | 14.81 | 10.60 | 48.90 | 27.33 | 25.54 | | 38.17 | 65.39 |
| 1983 | 54.99 | | | 14.78 | 10.57 | 48.53 | 27.42 | 25.39 | | 39.13 | 64.66 |
| 1984 | 54.75 | | | 14.78 | 10.55 | 48.77 | 27.89 | 25.22 | | 39.92 | 65.46 |
| 1985 | 54.80 | | | 14.72 | 10.42 | 49.13 | 28.20 | 25.00 | | 40.88 | 65.99 |
| 1986 | 54.71 | | 26.04 | 14.63 | 10.32 | 49.62 | 28.48 | 24.77 | | 41.62 | 66.15 |
| 1987 | 54.43 | | 25.56 | 14.58 | 10.23 | 49.96 | 28.71 | 24.59 | | 42.47 | 65.98 |
| 1988 | 53.70 | | 25.34 | 14.51 | 10.14 | 50.12 | 28.84 | 24.35 | | 43.43 | 66.74 |
| 1989 | 53.03 | | 25.27 | 14.35 | 10.07 | 50.35 | 28.98 | 24.14 | 34.38 | 43.97 | 66.01 |
| 1990 | 52.44 | | 25.23 | 14.17 | 9.99 | 50.67 | 29.51 | 24.06 | 34.00 | 44.57 | 66.18 |
| 1991 | 51.92 | | 25.12 | 13.99 | 9.90 | 50.89 | 29.98 | 23.66 | 33.69 | 44.88 | 65.84 |
| 1992 | 51.46 | | 25.04 | 13.90 | 9.87 | 50.89 | 30.13 | 23.42 | 33.81 | 45.99 | 65.16 |
| 1993 | 51.14 | 45.05 | 24.96 | 13.82 | 9.81 | 50.55 | 30.08 | 22.88 | 33.21 | 47.74 | 64.75 |
| 1994 | 50.84 | 43.89 | 24.93 | 13.74 | 9.76 | 50.06 | 30.25 | 21.98 | 32.97 | 48.25 | 65.60 |
| 1995 | 49.81 | 43.18 | 24.78 | 13.64 | 9.66 | 49.48 | 30.58 | 21.15 | 32.69 | 49.06 | 63.38 |
| 1996 | 48.63 | 43.54 | 24.61 | 13.55 | 9.57 | 48.88 | 30.74 | 20.33 | 32.07 | 49.51 | 62.25 |
| 1997 | 47.70 | 43.91 | 24.44 | 13.46 | 9.49 | 48.42 | 30.92 | 19.50 | 31.09 | 50.14 | 62.22 |
| 1998 | 46.82 | 44.81 | 24.22 | 13.33 | 9.36 | 47.90 | 30.90 | 18.80 | 30.00 | 50.79 | 62.14 |
| 1999 | 45.96 | 45.55 | 24.10 | 13.19 | 9.22 | 47.18 | 30.86 | 18.17 | 29.31 | 51.33 | 61.36 |
| 2000 | 45.22 | 46.26 | 23.99 | 13.04 | 9.10 | 46.75 | 31.00 | 17.61 | 29.08 | 51.86 | 61.32 |
| 2001 | 44.68 | 46.76 | 23.92 | 12.89 | 8.94 | 46.59 | 31.00 | 17.16 | 28.73 | 51.71 | 60.59 |
| 2002 | 44.15 | 46.88 | 23.85 | 12.76 | 8.83 | 46.50 | 30.96 | 16.67 | 28.37 | 51.68 | 60.31 |
| 2003 | 43.57 | 46.77 | 23.80 | 12.63 | 8.75 | 47.00 | 31.25 | 16.18 | 28.25 | 51.22 | 61.49 |
| 2004 | 42.87 | 46.75 | 23.69 | 12.50 | 8.67 | 47.35 | 31.70 | 15.71 | 27.96 | 50.65 | 62.61 |
| 2005 | 42.10 | 46.90 | 23.56 | 12.43 | 8.59 | 47.45 | 31.74 | 15.27 | 27.81 | 47.65 | 61.21 |
| 2006 | 41.19 | 46.97 | 23.33 | 12.34 | 8.50 | 46.81 | 31.52 | 14.84 | 27.17 | 45.47 | 62.38 |
| 2007 | 40.30 | 46.80 | 23.00 | 12.20 | 8.40 | 46.10 | 30.90 | 14.40 | 26.80 | 43.90 | 62.70 |
| 2008 | 39.38 | 46.18 | 21.86 | 12.02 | 8.32 | 45.25 | 30.19 | 13.89 | 26.47 | 42.08 | 62.75 |
| 2009 | | | | 11.94 | 8.24 | | | | | | |