

Informal economy between the problem of definition and the difficulty of measurement

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Abstract

The research discusses the topic of the informal economy, the phenomenon of the modern era as a result of its deterioration, and as a result of its role and weight in the economies of countries. The concept of the informal economy has received great attention during recent decades, both at the theoretical level and at the practical level. Interest in this concept and in the way it is measured has increased in recent years, especially with the adoption of this concept by many governments and international institutions, and testing its relationship with some important economic and social development variables such as income, education, poverty and unemployment...Using the descriptive analytical approach, the multiplicity of methods used in measuring the informal economy in terms of the input used in the measurement has been reached, and therefore the estimates given to this economy differ, which makes it difficult to find a comprehensive indicator that includes all activities even in one economy.

Keywords: informal sector; informal economy; measurement ; critical approaches; demimic methodolog

Jel Classification Codes: O17, E26, H26.

1. Introduction:

The phenomenon of the informal economy is no longer confined to limited national and geographical frameworks, but has become a problem of an international nature. An economy is hardly free from the circle of informal activities. Since it was presented to the Department of Discussions in 1972, experts have different views on the nature of the informal economy due to the difficulty of accounting for all informal activities because of their abundance, as well as the inclusion of this phenomenon in many names, including: the informal economy, the hidden economy, the tunnel economy, the shadow economy, the parallel economy... One of the meanings of the expansion of the penetration of this phenomenon in the economies of countries. This makes those who study the phenomenon and track its ramifications differ with other scholars and researchers in the same field to reach a comprehensive explanation for it.

Proceeding from these considerations, the extreme complexity of the issue in its approaches was reflected in its estimates, Due to the hidden nature of the informal economy phenomenon, economists have not reached a unified estimate of its size. There are various methods and approaches for assessing the size of the informal economy, which differ significantly depending on the sources of statistical data collection and the quality of activities being assessed. However, there is no optimal method for a comprehensive evaluation at this time., as each approach is characterized by unique strengths and weaknesses, and concludes with differentiated insights and results.

Studies have shown that informal economies have reached negligible proportions of total economic activity in both developing and developed countries alike, and in some cases they are growing at rates not seen in formal economies. Therefore, through this research paper, we will try to answer the following problems:

- **What are the key theoretical frameworks associated with the informal economy?**

- **What methodologies are employed to assess economic activities, and can we identify comprehensive approaches that encapsulate the multifaceted nature of the informal economy?**

Answering these questions translates the different approaches that explain the problematic definition and measurement of the informal economy, which formed the focus of this research.

1- Review of Theoretical Literature on the Informal Economy

1-1- Origins of the Term and Early Interest While

we are not aiming to provide a comprehensive historical account of the term "informal economy," it is essential to highlight key milestones in its development and the growing academic interest it has attracted over time. These stages reflect how the concept has evolved and gained prominence in economic and social studies. We are not in the process of a complete history of the term informal economy, but we want to briefly recall important stages of this development, which helps to understand what is currently going on within this economy. The phenomenon of the informal economy is a complex economic phenomenon, as one who is deeply involved in economic history can say that the emergence of this economy dates back to before the first attempts to regulate the exchange of goods by regulatory institutions managed by central authorities – that is, before the emergence of countries and the formal economy associated with them, as **Sédillot** pointed out in his book on the history of black markets published in 1985 that the emergence of tax fraud in ancient China was in 10,000 years BC.

Since its inception, the concept of the informal economy, which is currently recognized, has been taking shape and developing until it reflects the phenomenon that summarizes the natural reactions of individuals to the restrictions and laws enacted by the state on the exchanges that take place in the market, as individuals, although they have the ability to organize their work in the organized market, have turned to the parallel market to avoid those restrictions and laws imposed on their activities. Until the 1970s, activities that escaped the statistics of the state were called black activities, black market, black work...

However, the real emergence of the term "**informal economy**" is often attributed to Kenya's famous report published by the International Labour Office in 1972, the latter of which not only used the description "informal sector" for the first time, but also used a set of technical characteristics belonging to this sector, thus determining the analysis at the level of production units (Lautier Brono, 2004, p. 09).

Accordingly, the International Labour Office is the first official international organization to use the term "informal sector", and the dialogue on this phenomenon has increased since 1973, when the British entrepreneur **Keith Harth** invented a new concept that attracted the attention of students the most, and had an exceptional impact, as he introduced the concept of the informal sector in his study of employment in Ghana. Through it, he tried to present the problem of informal income as complementary income, which has become necessary for individuals in an economy characterized by high inflation and a stable wage level, so the analysis here focuses on the level of families (McGaffey, 1991, p. 08).

Then **Gutmann** came and drew attention again to the phenomenon of the informal economy when he published his research on the bottom economy, in which he pointed out that economic transactions that are not recorded in national product accounts are not as small as they can be neglected (Nabih, 2008, p. 26). As a result, many economists have tried to prove the hypothesis developed by **Gutmann**, by ensuring the relative importance of the informal economy in the underdeveloped countries of the world. These studies have proven that the informal economy has reached rates that cannot be neglected in the total economic activity in all countries of the developed and developing world, and this has led to increasing interest in the size of this phenomenon and its various dimensions.

1-2-The Problem of Naming

The phenomenon of the informal economy is informal in form and terminology. After more than three decades of research, investigations and analysis, there is still disagreement among researchers about the terminology covering this phenomenon. The terms used to name the

phenomenon can be divided into three groups as follows (Andrews, 2005, p. 12):

- **The first category** emphasizes the concept of secrecy, with several terms used to describe the covert nature of the phenomenon. Notable terms include "underground economy," "black economy," "hidden economy," and "backdoor economy." These labels suggest that the activities associated with this phenomenon are often perceived as illegal, highlighting their secretive nature.
- **The second category** focuses on the concept of informality, implying the irregularity of the phenomenon. Terms such as "informal economy," "unregulated economy," and "unmonitored economy" are frequently used in this context. These labels capture a narrower understanding of the phenomenon, typically excluding illegal activities from consideration.
- **The third category** addresses the phenomenon's relationship with the formal economy. Common terms in this group include "shadow economy," "parallel economy," "secondary economy," and "marginal economy." These terms underscore the dynamic interaction between the formal economy and the informal sector, reflecting how both influence and are influenced by each other.

This division, although logical, cannot always be taken into account because each country or region gives its own name without taking into account the concept of confidentiality, systemicity, or relationship to the formal economy. With the tremendous development of this economy, especially in developing countries, the names given to it have evolved, exceeding 20 terms and the existence of these terms, ...and the lack of consensus regarding the terminology used to describe the informal economy highlights the complexity of the phenomenon. This diversity in terms reflects the multifaceted nature of informality, which has become a prominent subject of academic discussion in recent decades. The problem of definition

Despite the importance of this economy, developing a general framework for its concept is still difficult, as its concepts and definitions

are numerous, which carry multiple meanings that vary depending on the purpose of the concept. Examining any of these concepts or definitions in isolation fails to provide a comprehensive understanding of the informal economy. This underscores the challenge of defining the informal economy, as it is a concept with diverse interpretations and lacks consensus among researchers.

The International Labour Organization (ILO) was the first to bring attention to the subject of the informal economy., following a study carried out in Ghana and Kenya in 1972 within the framework of the International Employment Programme, which highlighted in particular that the social problem of these countries is not unemployment but rather the presence of a group of people who can be described as working poor who face difficult situations to do work and services without their work being recognized, registered, organized or protected by the state (Travail Décent et Economie Informelle, 2002, p. 01). According to these studies, every activity is considered informal if it meets the following seven conditions (Secteur Informel Illusions et Réalités, 2005, p. 24):

- 1- Easy access to the market.
- 2- Use of local resources.
- 3- Family ownership of the institution.
- 4- Small scale
- 5- The technology with the highest density of work.
- 6- Out-of-school training.
- 7- markets with infrequent competition.

It is also defined by the International Monetary Fund as “the informal economy includes not only illicit activities, but also unreported forms of income, derived from the production of legitimate goods and services, whether from cash or barter transactions.” (Frederick Schneider and Dominic Enstee, 2002, p. 02) This is also what **Vito Tanzi** went on in his definition of this economy, noting that the informal economy “turns to earned incomes that are not reported to the tax authorities, or total incomes that are not included in the national accounts.” (Nabih, The Hidden Economy, 2008, p. 28)

These two definitions agree in their definition of the informal economy that it includes all incomes resulting from a group of activities that generate income that is not formally included in the accounts of the national product, because they are deliberately concealed to evade tax or to evade the obligations associated with the origin of the activity or because these income-generating activities are contrary to the laws in the country.

We also find that some economists such as **Melovesky** point out that the term informal economy does not mean that all transactions are originally carried out in the formal economy. Some goods may be produced in the formal economy, and then recorded accordingly within its accounts. However, they are used in the informal economy, and the added value that is carried out on them is not recorded within the GDP accounts.

According to this definition, the informal economy is closer to the name of the parallel or second economy, as it arises on the sidelines of an already existing formal economy. It evades all entitlements associated with the disclosure of these activities, and takes advantage of all the benefits enjoyed by those affiliated with the formal economy.

Some economists go so far as to link the informal economy to legal protections. **Guy Pfefferman defines it** as the sector that consists mainly of street peddlers and other self-employed people in low-productivity occupations, and this sector has grown as a result of the increasing scarcity of formal employment opportunities (Boukhit, 1999, p. 13). This definition focuses attention on the legal protection that individuals working in this sector lack as a result of their exclusion from the official sector, which is often translated on the ground in the form of street vendors, who rely on the resale of products and goods, taking streets and sidewalks as their markets, and wooden tables as their shops to ensure their stability and continuity. This leads us to diagnose the real conditions experienced by the informal sector as an important and influential factor in the increasing numbers of those involved in this sector.

2- Intellectual trends of the measurement approach

There are various approaches and methods employed to measure the informal economy, each differing based on the inputs used in the measurement process. As a result, estimates of the size of the informal

economy can vary, even within the same economy. This variation in estimates can be attributed to several factors:

- Different measurement methods focus on distinct aspects of the informal economy. Some approaches measure unrecorded income that is not reflected in national accounts, while others assess undeclared or unreported income to tax authorities.
- Each method used to measure the informal economy was carried out under different assumptions than the other methods, which led to different estimates.
- Differences in estimates may be due to different data sources, and different periods of time during which estimates were made.

There are actually two sets of approaches and methods for measuring the informal economy, the first called direct approaches, which are based on estimating the activities that take place in it, that is, grouping these activities to obtain an estimate of the transactions that take place in this economy. and indirect approaches, and is based on trying to discover the implications of the existence of such an economy.

2-1- Direct Curriculum

One of the earliest methods for measuring and analyzing the informal economy involves gathering data from the participants (representatives of both supply and demand) of goods and services provided by the informal sector to estimate the volume of its transactions. This is a partial approach, typically implemented through the design of surveys and samples, relying on voluntary responses or tax audits. The key advantage of this method is the detailed insight it provides into the structure of informal activities. By using questionnaires, it captures responses from individuals about their involvement in informal transactions, either as sellers or buyers..

The informal economy can be measured by the tax authorities detecting unreported incomes through tax review and intensive scrutiny of a sample of financiers who have committed to submit tax returns, on the basis of which it is possible to determine the amount of tax borne by

taxpayers if they strictly comply with tax laws, and to circulate these results at the national level (Al-Sharqawi, p. 56).

This approach has several limitations:

- The results of these questionnaires are highly sensitive to how the questions are framed and worded.
- The accuracy of the findings depends on the willingness and cooperation of the respondents. Many individuals may be reluctant to admit to engaging in fraudulent or deceptive behavior, making the data potentially unreliable and limiting the trustworthiness of the results (Schneider, *Shadow Economies and Corruption All Over the World: What Do We Really Know?*, 2007, p. 37).
- Samples of the audit program are taken from tax declarations and do not include those who have not filed declarations with the tax authorities, whether their income is derived from a legitimate or illegal activity, and this exclusion may cause the estimates of the informal economy to fall (i.e. measuring it below its real value).

2-2- Indirect approaches

These approaches focus on measuring the broader implications of the informal economy's existence and are often referred to as "indicators." They rely on macroeconomic data and use various economic indicators that provide insights into the growth and development of the informal economy.

2-2-1- Approach to differences between income and expenditure

This entry is based on the premise that individuals obtain income from different sources, and that there is some aspect of these incomes that is not disclosed, or at least concealed. However, these hidden incomes will turn into spending sooner or later (Al-Sharqawi, p. 59), so the differences between recorded incomes and spending give us information about the size of the informal economy.

If all elements of spending are measured without errors, this approach gives a good estimate of the informal economy, but it should be noted that caution should be taken when dealing with this approach for several considerations, including:

- Overexpenditure on income can be due to negative savings, emergency circumstances, or life-cycle factors. On the other hand, Greenfield points out that there is a strong likelihood that individuals will resort to giving false answers, or that they may not know that those who provide them with goods or services are already working in the informal economy (Nabih, *The Hidden Economy*, 2008, p. 60).
- Some items - such as capital gains – are included in taxable income and are not included in personal (individual) income, and the different methods of dealing with consumption make the two figures incomparable (Andrews, 2005, p. 83).

2-2-2- Labour Market Approach or Italian Method

This method is applied in developed countries more than developing countries, and involves a comparison between actual labor force participation rates and those officially recorded. Assuming that the labor force participates at a fixed rate overall, therefore the difference enables us to estimate the volume of informal employment. This entry is based on the use of labour force participation surveys, which reveal that many more people are involved in economic activities than are published by official statistics. By comparing contribution rates with the comparison period, the relative size of the informal labour force can be derived. By making assumptions about worker productivity in both the formal and informal economy, the informal economy can be estimated (Nabih, *The Hidden Economy*, 2008, p. 62).

Although it is important to focus on the effects of the informal economy on the detection of non-cash incomes or through barter operations, it suffers from several weaknesses, including:

- It takes into account a narrow concept of the informal economy, as it does not include in its measurement non-market activities and crime activities whose practitioners are not included in the employment statistics resulting from field surveys (Andrews, 2005, p. 91).
- Neglecting this approach to unauthorized income resulting from capital, as it is limited in its measurement of income resulting from

the activities of the informal economy to the income generated only on the employment component.

- Neglecting the issue of multiple jobs, as we find that there are many groups who are considered by the investigations to have official incomes, but they can practice another informal activity (unauthorized), and child labor has also been neglected, as they are unaccounted for due to their lack of legal age.

2-2-3- Kaufman Method (Electricity Consumption)

This method is based on the estimation of the informal economy and the measurement of its value on the use of the method of electricity consumption index for GDP in a particular region or region, and comparing this consumption with the rate assumed to be required for the volume of official production in that region or region. If the total consumption of electricity is greater than the quantity required, this is an indication of the existence of informal production. Overall, it has been empirically observed that both electricity consumption and formal and informal economic activity are moving slowly around the world. With both electricity and GDP close to each other (which is usually close to one), and by measuring the macroeconomy and subtracting it from official national output estimates, Kaufman and Kaliberd were able to reach GDP (Frederick Schneider and Dominic Enstee, 2002, p. 34), so electricity consumption unexplained by GDP is due to the informal economy, so the difference between official GDP and electricity consumption can give us information on the size of the informal economy.

Although this method is relatively simple and easy to apply due to the availability of data, it has faced significant criticism. One of the primary critiques is the difficulty in justifying a consistent relationship between electricity consumption and GDP. Not all informal economic activities rely on electricity, as alternative energy sources such as gas or oil may be used. Consequently, certain segments of the informal economy can remain hidden. Additionally, GDP can grow through various means without a corresponding increase in energy consumption, as energy is not only an intermediate good in production but also a final consumer good. Therefore,

an increase in energy use does not necessarily correlate with the expansion of the informal economy.

2-2-4- Critical Approaches

Monetary approaches are among the most widely used methods for measuring the informal economy, yet they are also highly susceptible to criticism. These methods focus on analyzing changes in the volume of cash transactions and currency usage in economic activities. This has led researchers and analysts of the informal economy to conduct numerous studies on money demand in an attempt to estimate the size of the informal economy. The central question these studies aim to address is: "How much money can be traded in the economy if there is no underground economy?". Accordingly, this approach is based on the basic assumption that the transactions of the informal economy are mainly carried out using cash, in an attempt by the dealers in this economy to hide their transactions, which are discovered if they are carried out using other means of payment such as checks, credit cards ...

Proceeding from this, there is a positive relationship between the demand for liquidity and the size of the informal economy. That is, if the money supply exceeds the level of formal transactions, that difference is used to measure the volume of informal transactions.

The most prominent monetary methods used in measuring the informal economy are:

- Cash to Demand Deposit Rate Method
- Swap Method
- High Monetization Style
- **Tax Evasion and Demand for Money**

Perhaps the most prominent criticisms of this approach are:

- Some argue that the increase in liquid money may be due mainly to changes in income, consumption and interest rates, rather than to the growth of the informal economy. The money

supply ratio may (Nabih, *The Hidden Economy*, 2008, p. 67) also be affected by the change in payment methods, such as the shift from the use of liquid money to the use of checks.

- It is not possible to definitively state that all transactions within the informal economy are conducted in cash. According to a detailed survey conducted by Isachsen and Storm in Norway in 1980, approximately 80% of the transaction volume in the informal sector was cash-based. Additionally, their findings revealed that the overall size of the informal economy, which also included barter transactions, was significantly larger than earlier estimates had suggested (Frederick Schneider and Dominic Enstee, 2002, p. 32).
- Assuming that the ratio of transactions to total official output is constant over time (the speed of money circulation in the formal economy and the informal economy is the same).

2-2-5- Latent variable modeling

The previous methods used to estimate the informal economy are based on one view, which is to rely on a single indicator to be able to calculate the effects of the existence of the informal economy such as employment, production, or financial markets... While the impact of this economy may appear simultaneously in terms of employment, production, and money markets.

Over the past 25 years, a standard economic method known as the "Dynamic Multiple Indicators Multiple Causes" (DIMIMIC) model has been developed to analyze the multifaceted causes and effects of the informal economy. This model estimates the size of the informal economy by considering various observable variables that influence it, such as the tax burden and regulatory pressure, as well as those impacted by informal economic activities, including liquidity, official working hours, and unemployment rates.

The DIMIMIC approach assumes that the size of the shadow economy is shaped by a range of indicators, which can also serve as predictors of its future development. The model highlights the interplay over time between the causes of the shadow economy (denoted as $Z_i Z_{iZ_i}$ for $i=1,2,\dots,k_i = 1,$

2, \dots, $k_i=1,2,\dots,k$) and the effects (denoted as $Y_j Y_{-j} Y_j$ for $j=1,2,\dots,p_j = 1, 2, \dots, p_j=1,2,\dots,p$). Importantly, it distinguishes between the underlying causes and the resulting effects. The primary causes include:

- **Tax burden:** Both actual and anticipated direct and indirect taxes create a substantial incentive for individuals to engage in shadow economy activities, particularly when the tax burden is perceived as excessive.
- **Regulatory burden:** Increasing regulatory pressure similarly drives individuals and businesses to operate within the informal economy to avoid compliance.
- **Citizens' attitudes toward the state:** The willingness of individuals to exit the formal sector and enter the shadow economy is often influenced by their perceptions of the state and its institutions.

Any change in the size of the shadow economy can manifest in various indicators, such as:

- **Monetary indicators:** As shadow economy activities grow, the volume of monetary transactions outside the formal system also increases.
- **Labor market trends:** A rise in the shadow economy leads to decreased participation in the formal sector, as workers shift to informal employment. This is often accompanied by a reduction in formal working hours.
- **Production market developments:** An expanding shadow economy pulls resources, particularly labor, away from the formal sector, potentially reducing the official growth rate of the economy.

Although the DIMIMIC model is one of the most comprehensive approaches, offering a well-structured behavioral framework for analyzing the shadow economy, it has not been without criticism. Some objections

center on the assumptions and complexity involved in applying the model to diverse economic contexts.

- It needs a huge database, and as this data is often not available (especially for developing economies) this approach is not applicable (Manal Hussein & Abdel Razek Al-Marsa, 2010).
- Very sensitive to changes in the estimates data, as simple changes in the values of the variables (sample size, alternative specifications...) will strongly influence estimates.
- Difficulty in obtaining reliable data regarding causal variables except tax ones.

2-3- Estimates of the world's informal economy

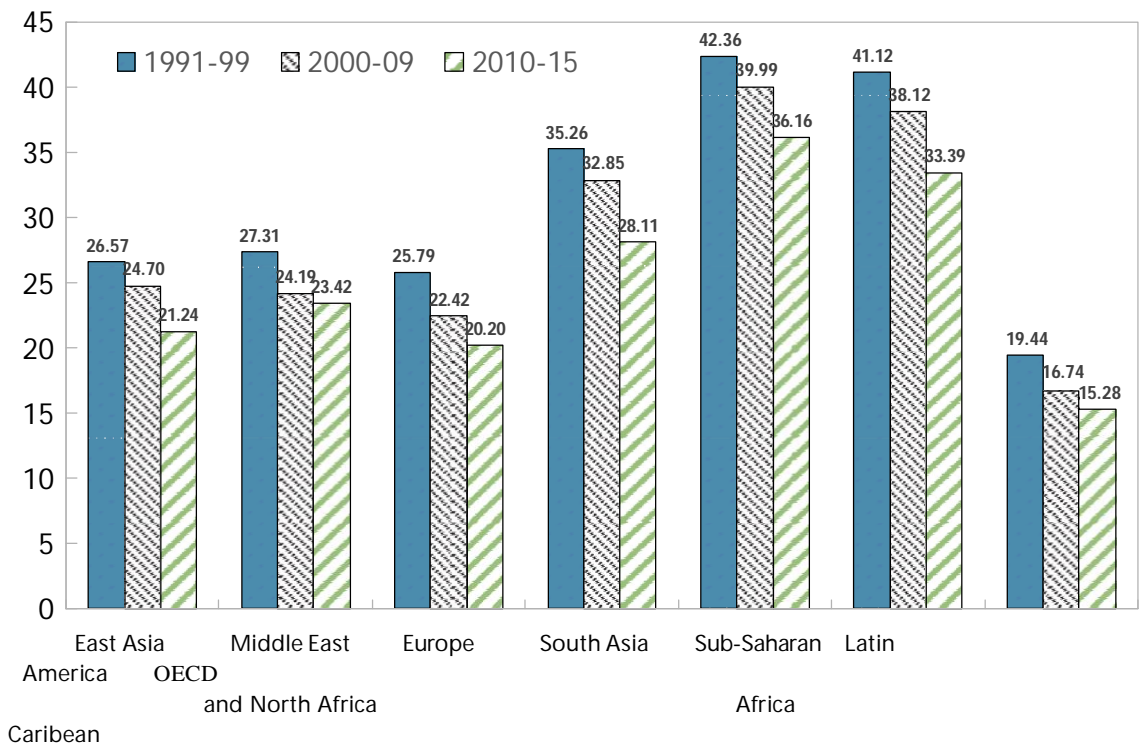
In order to be able to determine the difference in the sizes of this type of economy in different countries as a percentage of GDP, we include in the following estimates of the informal economy in groups of countries, the study "**Shadow Economics: What have we learned during the past 20 years?**" Submitted by the researcher Friedrich Schneider in cooperation with the International Monetary Fund, and is one of the recent studies that dealt with the comparison of the informal economy within 158 countries within the Arab and international countries through the use of the MIMIC methodology during the period (1991-2015). Regarding the estimation of the informal economy, the results listed in Table02 were reached:

Table 01: Size and development of the informal economy in 158 countries during the period (1992-2015)

Years	1992.	1993	1994	1995	1996	1997	1998	1999
Weight (%)	36 14.	36 14.	36 14.	36 14.	36 14.	36 14.	36 14.	36 14.
Years	2000	2001	2002	2003	2004	2005	2006	2007
Weight (%)	34.20	34.20	34.20	34.20	34.20	34.20	34.20	34.20
Years	2008	2009	2010	2011	2012	2013	2014	2015
Weight (%)	24.07	24.07	24.07	24.07	24.07	24.07	24.07	24.07

Source: (Medina & Friedrich Schneider, 2018, p. 69)

Figure 01: Shadow economy by region (average, percentage of GDP)



source: (Medina & Friedrich Schneider, 2018, p. 67)

The table and figure above show some detailed results about the informal economy by region. In this regard, OECD countries score the lowest percentage by a large margin with a value of less than 20%, and sub-

Saharan African countries and Latin American countries are the highest with average values of more than 36% (both averages during the period 1991-2015). Across all groups of countries, we are seeing a significant decline in the size of the informal economy over time; the average decline from 1991 to 2015 was 5.3 percentage points. From this we conclude that high-income countries have the lowest shadow economies and vice versa in low-income countries.

Conclusion

During this research, we dealt with a group of problems that revolve in their entirety around: what is the informal economy, and what are the best ways to measure it, as we have seen, it is not easy to answer this question, as researchers in the informal economy agree on the difficulty of finding statistics that approximate the informal economy in its comprehensiveness because it is inherently hidden, but this did not prevent them from trying to develop an appropriate answer, but they have developed many methods, methods and models that aim to reveal the size and quality of informal activities. Although these methods and models have been criticized, they are the best evidence of the existence and growth of informal economy activity. However, the multiplicity of methods of measuring the size and difference of the informal economy has led to very different results and conclusions about the size and growth of this economy in a specific country and in a specific period of time. This necessitates caution when using estimates for comparison or policy evaluation purposes.

references:

Manal Hussein, & Abdel Razek Al-Marsa. (2010). The Regulatory Framework for Transforming the Informal Sector into a Formal Sector: A Reading in International Experiences and Their Application in the Egyptian Case. *Journal of Humanities*(45).

(2005). *Secteur Informel Illusions et Réalités*. Algérie: Conseil National et Social .

Al-Sharqawi, A. H. (n.d.).

Andrews, A. W. (2005). , *“The Shadow Economy: Concepts - Components - Causes - Impact on the Public Budget,*. Cairo: University House Foundation.

Boukhit, S. (1999). The Reality of the Informal Economy in the Algerian City. *Sidewalks Modelja*.

Frederick Schneider and Dominic Enstee. (2002). *Hiding Behind Misguidance: The Growth of the Informal Economy*. Washington: International Monetary Fund.

Lautier Brono. (2004). *“ L'économie Informelle Dans Le Tiers-Monde”*,. (Editions la Découverte, Ed.) Paris,.

McGaffey. (1991). *Janet, The Real of Economy of Zaïre- The Contribution of Smulgglng and Other Unofficial Activities to National Wealth, James Currey*". London.

Nabih, N. A. (2008). , *“The Hidden Economy,*. Egypt,: Dar Al-Wafaa for Printing and Publishing,.

Schneider, F. (n.d.). ,“Shadow Economies and Corruption All Over the World: What Do We Really Know?”, Economics Discussion Paper, March 9, 2007,p37.

Schneider, F. (2007, March 9). Shadow Economies and Corruption All Over the World: What Do We Really Know? *Economics Discussion Paper*.

(2002). *Travail D cent et Economie Informelle*. Gen ve: Bureau International du Travail.